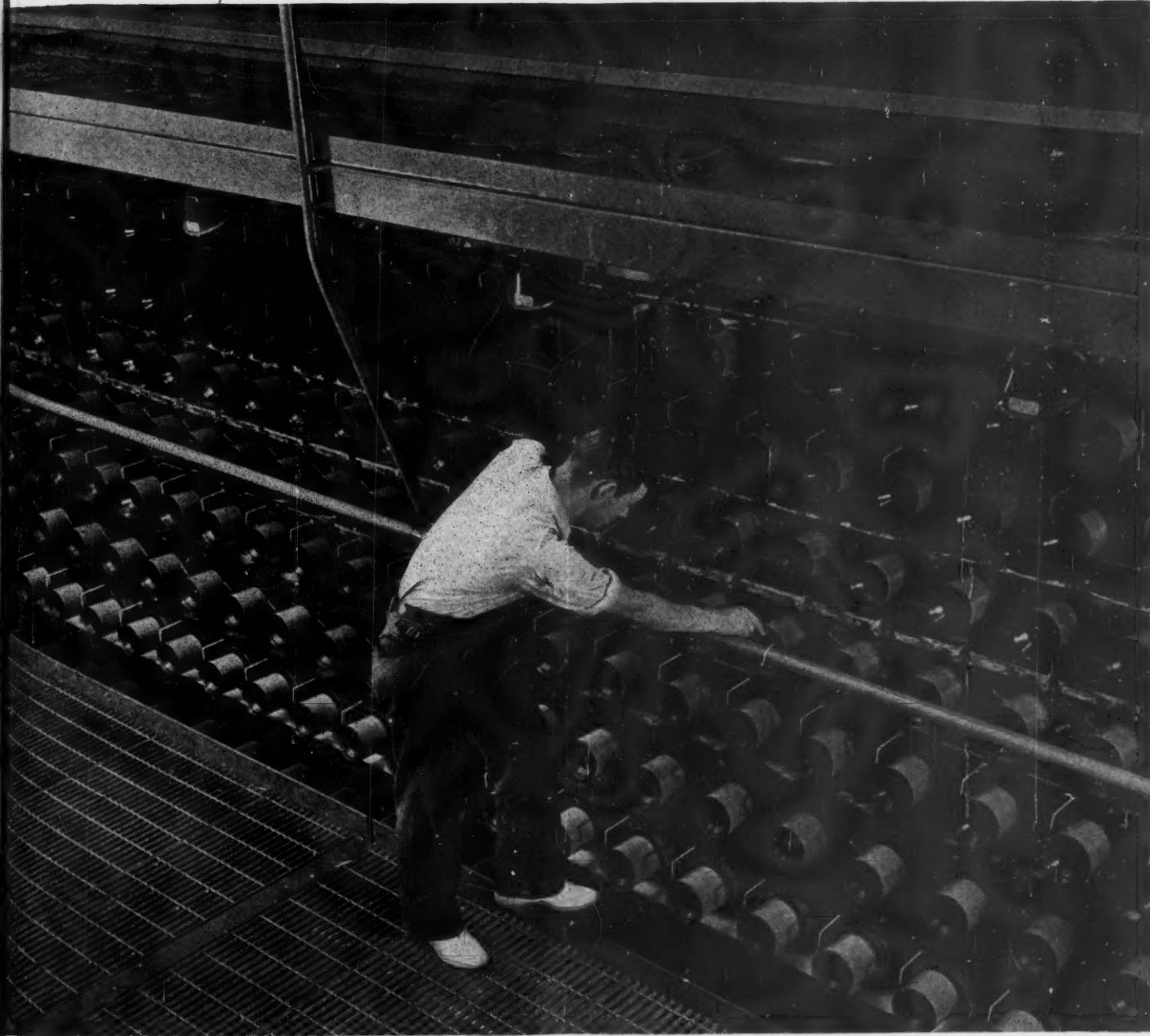


Industrial

September 1946

# Standardization



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- For Safe Grandstands and Tents** (page 219)
- Colleges Urged to Teach Standards** (page 230)

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Some 2000 Industrial concerns hold membership either directly or by group arrangement through their respective trade associations

## Standardization a Stimulus to Industrial Progress

Abstracted from an editorial published in *American Metal Market*, August 7, 1946

STORY-TELLERS, philosophers, artists, and poets often disparage modern standardization and mechanization, claiming that certain qualities of individualism, distinctiveness, and enjoyment in work are being undermined. We believe that their romantic views are grossly exaggerated because in the long run automatic mass production has provided the majority of people with a broader distribution of better products, shortened their hours of work, thereby providing more time for the individual worker to develop his own distinctiveness if he so chooses, and in many ways has contributed extensively towards a better life for the average man and woman. If some of us are excessively hurried, unhappy, do not know how to live right, or observe the monotonous standardization of personalities and environment, and accentuation of the material things of life, surely this cannot all be blamed on our industrial makeup. It would hardly be horse-sense to argue that every family should own a different type motor car or that every man should shave with a different kind of razor.

Of course, most of us do have sufficient sentiment, at times, to regret that many of the old artisans and skilled hand-workers, who took great pains and pride in their efforts to turn out fine pieces of work, are now almost out of the picture. Rightly, the old custom bootmaker constructed a different last for each customer, because no two pairs of feet are identical. But if shoes and

most other products were still being manufactured on this basis it is quite likely that many people would be going barefooted.

The successful operation of any industrial plant today necessitates the production of uniform and standard items. All the integrated steps of manufacturing are based on the ability to maintain sameness and reproducibility. Without this efficiency, low cost mass production and distribution would be impossible. Our whole economy is geared to standardizing methods and their continual improvement.

Standardization has become one of the most effective tools of management. It paves the way for reducing unit costs, promotes fairness in competition, and enables sellers and buyers to speak the same language. By trial and error it systematizes industry and eliminates disorganization. Many results of research and development are pooled for the benefit of all. Both production and utilization have been simplified. Were products not reasonably standardized, inventories would have to be always held at dangerously low levels and sales costs would be much higher. Standardization stimulates scientific progress and competition because the inherent merit of a product is the dominating factor. In many more ways, such as through safety and health codes, and the broadening of work opportunities, standardizing has contributed to the human side.

#### Our Front Cover

"How to make more—with less"—Parts for standard thread-reels used at the Industrial Rayon Corporation, Cleveland, are interchangeable and can fit on the reels for different functions. Article on page 225. Courtesy "Modern Industry".

# Industrial Standardization

Vol 17 No. 9

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September, 1946

Ruth E. Mason, Editor

35 Cents

The American Standards Association is a federation of national groups dealing with standardization. Through it, government, industry, labor, and the consumer work together to develop mutually satisfactory national standards. It acts as the authoritative channel for international cooperation in standardization work.

Subscription price \$4.00 per year (foreign \$5.00). Special to schools and libraries \$2.00 (foreign \$3.00). Re-entered as 2nd Class Matter 7/31/43, at the Post Office, New York, N.Y., Act of March 3, 1879.



International News Photo.

The new American Standard for Grandstands, Tents, and Other Places of Outdoor Assembly has been prepared to help prevent catastrophes such as the Hartford circus fire, the results of which are shown above. Six thousand spectators were watching the show when the fire started, and 163, mostly children, lost their lives. Some of the burned seats are shown in the foreground.

(See article on page 219)

# Plan Merger of Standards Groups

**Report by P. G. Agnew**

Change will result in stronger international standards body; final general conference to be held in London in October

**A** SERIES of joint meetings of the executive boards of the United Nations Standards Coordinating Committee and of the International Federation of National Standardizing Associations (ISA) was held in Paris beginning July 11, 1946. The purpose was to make further preparations for consolidating the two organizations into a single, stronger body for postwar work.

A first step to this end had already been taken by UNSCC at its New York meeting in October, 1945 (INDUSTRIAL STANDARDIZATION, November 1945). At that meeting a draft constitution had been drawn up and circulated to the various national standards bodies for study and criticism. Considerable criticism of this New York draft had developed, and three complete alternative drafts had been put forward—one by the Scandinavian countries and Switzerland, one by France, and one by Russia.

There was not time in the official joint meetings to work out the full details of a new draft constitution and bylaws, as some delegates had to leave early. Consequently, the delegates from Denmark, France, Netherlands, USSR, and USA were authorized to prepare a consolidated draft which should reconcile as far as possible the various proposals and suggestions.

This work was greatly facilitated by the previous agreement upon certain policies by the formal joint meetings.

Foremost among these policies was that the new association shall be in the form of a merger of the old Federation (ISA) and the United Nations Standards Coordinating Committee, and that the technical work of both organizations shall be consolidated and continued.

Fortunately, the drafting group contained men who had collaborated authoritatively in the preparation of the three alternate drafts mentioned above. It is the opinion of these

men and of the whole drafting group that those drafts have served their purpose and that the attention of all concerned can best be concentrated upon the new draft in preparing for the London Conference.

**P. G. Agnew, vice president and secretary of the American Standards Association, is a member of the Council of the International Federation of National Standardizing Associations (ISA) and of the Executive Committee of the United Nations Standards Coordinating Committee (UNSCC).**

**E. C. Crittenden, associate director of the National Bureau of Standards, is president of the United States National Committee of the International Electrotechnical Commission.**

*Dr Agnew and Mr Crittenden were present at the meeting of the ISA as delegates of the American Standards Association, and at the meeting of the IEC as delegates of the United States National Committee.*

## Name—

The name proposed in the new draft is "International Standards Association", instead of the "International Standards Coordinating Association" of the New York draft.

## Council—

There had been a conflict of opinion in regard to the composition of the governing council. The Russians wanted a council of 11, with permanent seats for the five large countries, as in UN. Others wanted a small council of six or seven without special tenures for the large countries. It was finally agreed to compromise

on a council of 11, the five large countries having seats for five years.

## Administrative Committee—

An administrative committee consisting of the president, the vice president, and one other member of the Council is provided to supervise the secretariat and provide for urgent administrative matters.

## Languages—

It is provided that reports and publications shall be issued in English and in French; or either in English or in French. But any national body may prepare a text in its own language and certify its accuracy to the Association, which text shall then be accepted as authentic.

It has been proposed that the Russian language be handled somewhat differently in that the publications would be translated, certified, and printed by the Russian standards organization, which would supply whatever quantity of these publications the central office required for distribution. Such texts would have equal authenticity with the English and French texts.

## IEC to Affiliate—

The Council of the International Electrotechnical Commission, which met just prior to the meetings of UNSCC and ISA, unanimously adopted a resolution favoring affiliation with the new association as its electrical division, with the proviso that it retain its name and procedure. (See E. C. Crittenden's report, page 218.)

## Technical Work—

A small committee was set up to make an intensive study of the technical programs of the two merging organizations, and to make recommendations as to just how these programs shall be consolidated, and also as to the assignment of priority ratings of the various projects.

Special interest attached to the participation of USSR delegates since these meetings and those of the IEC were the first international technical meetings attended by the Russians since the war. Their delegates were D. V. Golyaev, vice president

of the All-Soviet Standards Committee, and Professor M. A. Saverin, of the Moscow Technical High School.

The delegates of the American Standards Association were P. G. Agnew and E. C. Crittenden.

The countries represented at the meetings were Canada, Denmark,

France, Great Britain, Italy, the Netherlands, Switzerland, USSR, and USA.

J. G. Morrow, chairman of the Canadian Standards Association, and of the executive committee of United Nations Standards Coordinating Committee, presided at the joint meetings.

## Electrotechnical Commission To Join New Organization

**Report by E. C. Crittenden**

THE International Electrotechnical Commission, which has necessarily been inactive during the war, has now taken steps to revive its technical work and also to join with other bodies in forming a comprehensive organization to deal with problems of standardization on an international scale.

A meeting of the IEC Council held in Paris July 8 and 9 was attended by delegates from 16 countries: Belgium, Canada, Czechoslovakia, Denmark, France, Great Britain, India, Italy, Netherlands, Norway, Poland, Portugal, Sweden, Switzerland, USA, and USSR.

### Unanimously Favor Affiliation With New Organization

The meeting adopted unanimously a resolution favoring affiliation with a proposed new International Standards Association to be formed by merging the wartime United Nations Standards Coordinating Committee and the prewar Federation of National Standardizing Associations (commonly called the ISA).

Final action by the IEC will be taken after the new general organization has worked out precise details of its constitution and bylaws. There is, however, no reason to doubt that the IEC will operate as the electrical division of the new ISA, retaining its own name and procedures, but gaining the advantages of a common central office, which will be a point of contact with other bodies carrying on related work.

The Council also reviewed the status of projects which were under way in 1939, and made plans to push forward those believed to be most needed now. In view of conditions existing in Europe, the high-

est urgency was assigned to unification of designs for lamp bases and sockets and to agreement upon standard voltages for electricity supply lines. A new, separate committee was set up to recommend standard voltages for transmission lines above 220,000 volts. A special committee including representatives from several other organizations is to continue work on electrical causes of disturbance to radio reception.

### International Meetings Planned to Consider Proposals

It is hoped that these committees can work out proposals and prepare documents which will justify international meetings within a year to discuss them.

There are also a number of reports which were considered at the 1938 meeting of the Commission, but which required further work not completed before the war. Some of these reports can be published now without waiting for meetings.

### Uytborck, Holland, and Dunsheath, Britain, Elected

Professor L. Lombardi of Italy, president of the Commission since 1938, and Lord Mount Edgcumbe, honorary secretary, both resigned their offices. Mr E. Uytborck of Belgium was elected president, and Dr P. Dunsheath of Great Britain, honorary secretary. The U.S. National Committee of the IEC was represented at the meeting by E. C. Crittenden, associate director of the National Bureau of Standards, president of the USNC, and P. G. Agnew, vice president and secretary of the American Standards Association.

### Homes by Mass Production

"The way we should build homes after the war is the way we built ships and planes during the war—on the grand scale. We should abandon 'hands methods' in favor of prefabrication, just as we abandoned the buggy for the automobile. If I were building houses, I would not only mass-produce houses I could put up in a couple of hours, but I would include with each house a kit containing all the home furnishings you would need to go with the home! You could have your choice of kits."

—From an article entitled "America Is Just Getting Started" by Charles E. Sorensen, president, Willys-Overland Motors, Inc, which appeared in *The American Magazine*, Oct 5, 1945.

## Aeronautical Board Announces Standards Policy

The Aeronautical Board has announced its new policy for Army-Navy Aeronautical Standardization as follows:

"Wherever practicable, Army-Navy Aeronautical Standardization will be developed on a basis of permitting unrestricted competitive bidding by manufacturers on products of their own designs or processes.

"In cases where performance and exterior dimensions or envelopes can be satisfactorily standardized to permit interchangeability of the whole part and where this degree of standardization is sufficient, such procedure will be followed.

"In cases where exterior dimensions or envelopes cannot be standardized, and the resulting lack of interchangeability is acceptable to the Services, standardization will be based upon performance only.

"Standardization of proprietary items is not acceptable when such action promotes favoring an individual product."

# For Safe Grandstands and Tents

**By Robert S. Moulton**

**New American Standard, already being used for protection of 1946 pleasure-seekers, provides safety requirements for construction and capacity of grandstands, location and flameproofing of tents, adequate exits, lighting, and other features to protect against fire**

**B**EFORE the circus tent fire in Hartford, Connecticut, on July 6, 1944, few people had given much thought to the possible danger to life due to fire in places of outdoor assembly. The public seemed to feel that since they were outdoors there was not the same sort of danger as in buildings. Public authorities likewise did little to regulate the fire safety of tents, grandstands, and other places of outdoor assembly. Some conscientious officials, to be sure, made efforts to safeguard such places erected within their jurisdiction, but all too often nothing was done, either because of lack of legal authority or because of lack of appreciation of the potential dangers involved wherever a large number of people assembled in any location where there might be fire, smoke, or other conditions conducive to panic.

## **Large Loss of Life at Hartford Brought Action**

The Hartford circus fire, in which 163 people, mostly women and children, were killed, focused nationwide attention upon the seriousness of the problem. Before this, there had been a number of fires in large tents, but through fortunate circumstances there had been no large loss of life. Many large grandstands had also burned. Here again, no one remembered any case where a large number of persons had lost their lives by fire. Immediately after the Hartford fire there was a demand from all over the country for some sort of legislation to make tents and other places of outdoor assembly safe for occupancy by the general public. Many of the needed fire-

safety features might have been secured under the provisions of existing legislation. Nevertheless, there was an immediate demand for a national code which would act as a guide to local officials in applying reasonable requirements in the interest of public safety.

**Robert S. Moulton, technical secretary of the National Fire Protection Association, represents his organization on the Building Code Correlating Committee as well as on several ASA sectional committees. He is secretary of the Sectional Committee on the Building Exits Code, A9; and a member of the Sectional Committees on Building Code Requirements for Fire Protection and Fire Resistance, A51 and on Fire Fighting Equipment in Metal Mines, M17; and an alternate on the committee on Hose Coupling Screw Threads, B33.**

**The National Fire Protection Association is joint sponsor with the Building Officials Conference of America for the work on the American Standard Requirements for Grandstands, Tents, and Other Places of Outdoor Assembly, Z20.2-1946.**

As a result of this demand, a committee (ASA Sectional Committee on Safety Code for Grandstands, Tents, and Other Places of Outdoor Assem-

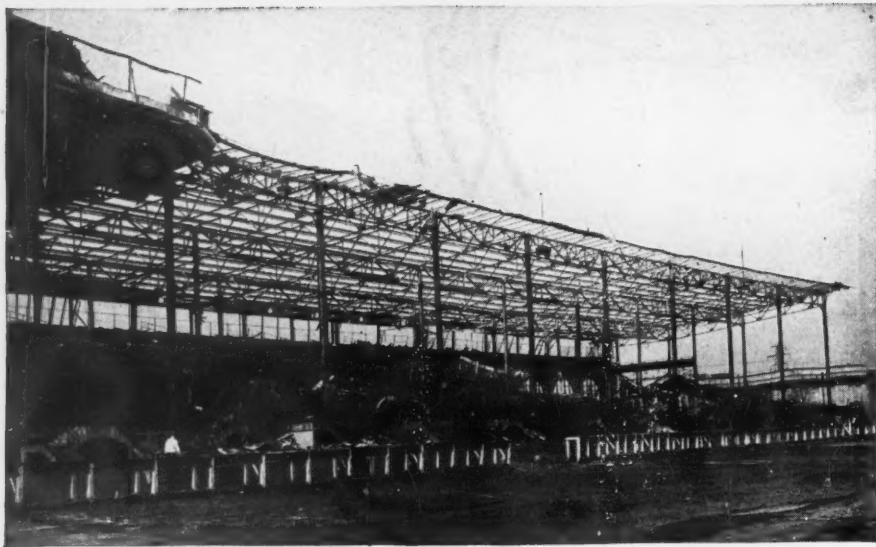
bly, Z20) was formed under the joint sponsorship of the National Fire Protection Association and the Building Officials Conference of America. This committee was charged with the responsibility of drafting a suitable national standard. It was a representative body giving participation in the formulation of the standard to all groups immediately interested.

At first glance it might appear a simple matter to prepare a standard adequate to prevent repetition of disasters such as the one in Hartford by simply requiring the flameproofing of the canvas used in tents, providing for adequate exists, minimizing the use of combustible materials, together with certain other more or less obvious features.

## **Committee Agreed on Objective But Differed on Details**

When the committee met, however, there were rather wide differences of opinion. All members agreed unanimously upon the fundamental objective of providing reasonable safety for the lives of the public, but there were many differences of opinion as to details. It was agreed that the desired objectives should be obtained with a minimum of expense and interference with the normal operations of the outdoor amusement industry. Some provisions which might have seemed desirable in the interest of public safety were shown to be so burdensome as, in effect, to prohibit the operation of certain types of outdoor amusement enterprise. The committee had no desire to interfere unnecessarily with the operation of legitimate amusement enterprise and endeavored to find other ways of securing a reasonable degree of safety and still allow circuses, fairs, carnivals, and the like to operate.

All this took much time, and after a series of meetings extending over more than a year, agreement was finally reached on all important points. The standard on places of outdoor assembly was approved by



Flames destroyed two-thirds of the 726-foot grandstand at the Canadian National Exhibition grounds at Toronto, Ontario, April 14, 1946. The fire started in a lounge under one wing of the concrete and brick section, and shot to the wood felt and gravel roof after getting a good start among the combustible contents of the lounge and an adjoining mess hall. Unprotected steel girders were warped by the heat. Loss: \$240,000.

the committee, adopted by the National Fire Protection Association and the Building Officials Conference of America as the sponsoring bodies, and was then approved by the American Standards Association as an American Standard. It was published by the National Fire Protection Association for immediate use at the beginning of the 1946 outdoor amusement season.

Even before its complete formulation, this standard had an important influence on the fire safety of tents and other places of outdoor assembly. Building officials, fire chiefs, and other local authorities have now assumed the responsibility for safeguarding the public. Even where no specific ordinances have been adopted, officials have, in many instances, prevented the operation of hazardous places of assembly, acting under the general provisions of police power.

The standard, now that it is finally adopted, will doubtless be used as a basis for further legislation on this subject. Circuses and other large amusement enterprises under responsible management are already voluntarily observing the provisions of this standard in order to discharge their responsibilities for providing safety to their patrons, and, inci-

dently, for their own protection. A number of the officials of Ringling Brothers, Barnum and Bailey Circus are serving prison terms imposed by the court as the result of their responsibility for the Hartford disaster, even though at the time there was little or no clear-cut legislation requiring fire-safety features, and the circus was being operated in accordance with time-honored and generally accepted practices.

Among the safety features stressed in the standard are construction and capacity of grandstands, location and flameproofing of tents, adequate exits, and lighting for all places of outdoor assembly. Smoking, fireworks, or unapproved open flames of any kind are prohibited in any tent while occupied by the public. No tent should be used for the display of motion pictures unless safety film is used. Ground enclosed by tents and to a point at least ten feet outside of such structures shall be cleared of all flammable material or vegetation which will carry fire.

All places of outdoor assembly shall have at all times ample and unrestricted access to public ways of approach from at least two points, removed from each other, but an available park, field, or open space approved as an area of refuge may be used in lieu of one means of access to a public way.

The standard specifies that the electrical system for places of outdoor assembly shall be properly installed and maintained. If portable, the electrical system should be inspected daily when in use by a qualified person representing the owner, and any defects found should be corrected before the public is admitted to the show or performance. The system shall be isolated from the public by proper elevation or guarding; electrical fuses and switches shall be enclosed in approved enclosures; and ground cables in area



International News Photo.

Bodies of the victims of the Ringling Brothers & Barnum and Bailey Circus fire being identified at Hartford. Through adequate safety precautions it is hoped that scenes like this can be prevented in the future.

NOTE: Copies of the American Standard Requirements for Grandstands, Tents, and Other Places of Outdoor Assembly, Z20.2-1946, are available at 25 cents each.

traversed by the public shall be placed in trenches or protected by approved covers.

It is recommended that storage and handling of flammable liquids or gases shall be in compliance with the standards of the NFPA; that police and fire details be arranged in advance of each performance; and that fire-extinguishing equipment shall be provided and maintained by employees who shall be properly trained for such purpose. One or more methods of fire alarm and emergency communication shall be arranged by the owner, according to the new standard.

Because of the variety of types of places of outdoor assembly covered in the standard, no general requirement for patrols of fire watchers has been included, but the ASA Sectional Committee on Safety Code for

Grandstands, Tents, and Other Places of Outdoor Assembly recognizes this feature of fire protection, and believes that a system of well-trained patrols of fire watchers should be maintained in every place of outdoor assembly where fire hazards might develop.

Already during the 1946 outdoor amusement season there are many evidences of improved fire safety. It is reasonable to assume that in the years to come the present standard will have increasing influence in making all such places of outdoor assembly safer for occupancy by the general public. The standard will doubtless have to be revised from time to time as a result of experience in the application of the 1946 edition. However, it seems unlikely that modifications will be made in its fundamental requirements.

In the interest of public safety, the ASA Sectional Committee on Safety Code for Grandstands, Tents, and Other Places of Outdoor Assembly, Z20, was organized under the joint sponsorship of the National Fire Protection Association and the Building Officials Conference of America. Representatives of the architectural, building, and construction industries, the entertainment field, insurance companies, public health and police authorities, and the government are members of the committee. They are:

Nolan D. Mitchell, National Bureau of Standards, *Chairman*  
J. H. Courtney, American Standards Association, *Secretary*

American Carnivals Association Inc, *Max Cohen*  
The American Institute of Architects, *George Idell*  
American Institute of Steel Construction Inc, *T. R. Higgins*  
American Iron & Steel Institute, *B. L. Wood*  
The American Public Health Association, *James L. Barron*  
American Wood-Preservers' Association, *Ralph H. Mann*  
The Building Officials Conference of America Inc, *William J. Ennis; Frank L. Lang (alternate)*  
International Association of Chiefs of Police, *Edward J. Hickey; Joseph T. Owens (alternate)*  
International Association of Fairs and Expositions, *F. H. Kingman*  
International Association of Governmental Labor Officials, *O. T. Nelson; Frank S. McElroy (alternate)*  
National Association of Amusement Parks, Beaches and Pools, *H. P. Schmeck*  
National Association of Mutual Casualty Companies, *David T. Shute*  
National Board of Fire Underwriters, *C. G. Lauber*  
National Bureau of Standards, *Nolan D. Mitchell*  
National Canvas Goods Manufacturers Association Inc, *William E. Russell; J. L. Stuart (alternate)*  
The National Conservation Bureau, *Donald Vaughan*  
National Fire Protection Association, Fire Marshals Section, *Henry G. Thomas*  
National Lumber Manufacturers Association, *John G. Shope; Frank H. Alcott (alternate)*  
National Safety Council, *H. L. Miner; Floyd E. Frazier (alternate)*  
Ringling Brothers, Barnum and Bailey's Circus, *Herbert DuVal; Dan Gordon Judge (alternate)*  
Ex Officio (Officers of the ASA Building Code Correlating Committee), *J. H. Courtney; Walker S. Lee; George N. Thompson*

It is understood that the committee plans to review the present edition of the standard in the light of experience gained during the 1946 amusement season and will make any necessary changes before the 1947 season opens.

## Council to Honor Pioneers In Modular Coordination

H. M. Lawrence, materials engineer of the American Standards Association, will serve as a member of a committee sponsored by the Producers' Council to choose those individuals who will be honored with an award for pioneering in the development of modular coordination of building materials and equipment. Citations will be awarded at a ceremony during the Council's semi-annual meeting on September 26.

In addition to the citations to the pioneers in modular coordination, it is planned to recognize in some other manner the many men who have taken part in the work of the ASA sectional committee for Project A62, Coordination of Dimensions of Building Materials and Equipment.

The Producers' Council is the national association of manufacturers of building materials and equipment, and among its purposes is the development, standardization, and adoption of improvements in building materials, equipment, and their use, and the development of improved methods and types of building design and construction, of new materials, equipment, and methods.

Also to serve on the Awards Committee are James Edmunds, president of the American Institute of Architects, and Tyler S. Rogers, technical director of the Owens-Corning Fiberglas Corporation. Theodore I. Coe is to act for Mr Edmunds and James Follin will assist Mr Rogers.

## Commercial Standards To Be Moved from NBS

The transfer of the Divisions of Simplified Practice and Commercial Standards out of the National Bureau of Standards was officially authorized as of July 16, the date on which Reorganization Plan No. 3, proposed by President Truman to Congress, became effective. It is expected that the Secretary of Commerce will assign the functions of the two divisions to the Office of Domestic Commerce. The reasons for the change were explained in President Truman's message to Congress, which is quoted in some detail on page 163 of the July issue of INDUSTRIAL STANDARDIZATION.

# Safety Code for Coal Mines Put in Effect by Government

**I**N line with the terms of the contract between the U. S. Government and the United Mine Workers of America, a new safety code for the prevention of accidents in coal mines has been drawn up and made effective as of July 29. The code covers all phases of mine safety and will remain in effect during the time that the U. S. Government operates the mines under the Krug-Lewis agreement.

Records show that the accident frequency rate among the nation's 500,000 miners in 1945 was 50.53 per million manhours, compared with an all-industry rate of 14.46. Inspectors of the Bureau of Mines have been working under the authority of the Federal Coal Mine Inspection Act since 1942, but the Bureau has had no authority to enforce its recommendations. About 50 percent of the Bureau's recommendations have been put into effect, however, it is reported. Coal mine operators have explained that it would add \$600,000,000 annually to the industry's costs to put all the Bureau's recommended standards into effect.

The various states have laws dealing with safety in mines and some of the state codes are considered comprehensive, but this is the first time in the history of the industry that an all-inclusive group of safety standards has been made applicable to a vast majority of bituminous coal and lignite mines in the United States, Secretary of the Interior J. A. Krug declared in announcing the new code.

Under the terms of the contract, the inspectors of the Bureau of Mines will make periodic inspections of the mines and report all violations of the new standards to the Coal Mines Administrator who is charged with responsibility for enforcement of the code and correction of violations.

The more important provisions of the new Federal Mine Safety Code are:

## Ventilation and Gases—

Faulty ventilation lets gases, such as methane, carbon dioxide, and hydrogen sulphide collect, endangering miners' lives, but cost has been the chief stumbling block to meeting the Bureau of Mines' standards on ventilation. Explosions that could be averted through proper dusting

and ventilation are held responsible for 7 to 10 percent of mine accidents, it is reported.

The code does not classify all mines as "potentially gassy", but distinguishes between those where gas has been found by accurate detection methods in the past, and those where none has been found. All coal mines, regardless of whether gas has or has not been found, must be examined for explosive gas (methane) and other hazards at least once a day within 4 hours before the workers enter the mine. In mines where methane has been detected previously, examinations by "fire bosses" or other accredited officials must be made before each shift starts to work in case there is more than one shift of workers. In addition, all mines must have a thorough examination once a week for gas, hazardous roof, and other dangers which might not be found during the preshift examinations. In requiring a sufficient volume of air at all working places underground to dilute and carry away gases and provide fresh air for miners, the code also prescribes regulations for the construction and maintenance of ventilating devices such as stoppings, doors, line brattices, overcasts, and undercasts. Safeguards for the main ventilating fans are stipulated, and underground booster fans cannot be installed in the future except after a special investigation and approval. Underground blower fans can be operated under certain conditions. The air underground must contain at least 19.5 percent oxygen, and the code prescribes the limits of methane which air returning from a

split may contain before the ventilation is improved or the men withdrawn from the mine.

## Explosives—

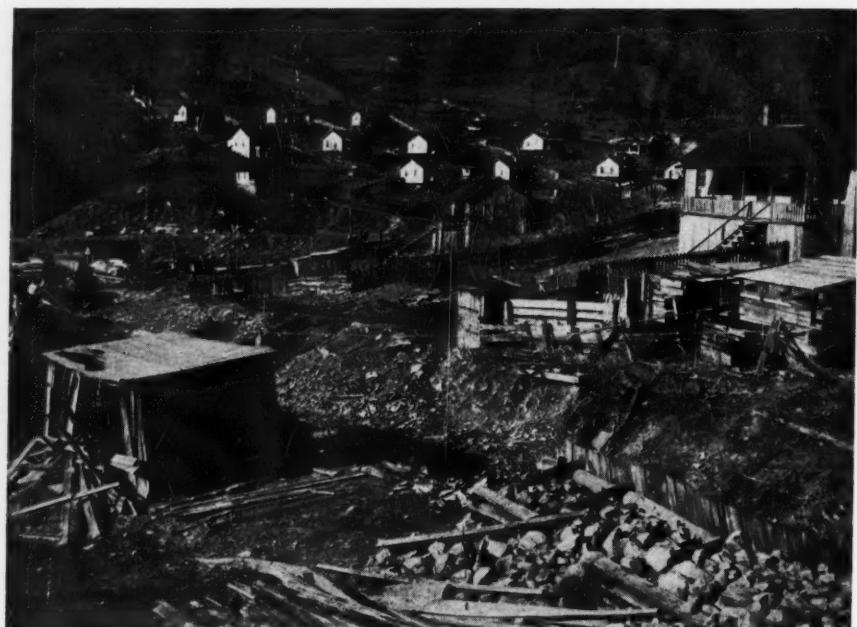
The code has several protective standards dealing with the use of black blasting powder—a type of explosive that is dangerous because it emits a longer and hotter flame than permissible explosives and is more likely to ignite explosive gas or dust in a mine. Black powder cannot be fired on shift—while workers are in the mine—unless proof is given the Bureau of Mines that the mine air contains less than 0.25 percent of methane. Black powder cannot be hauled into a mine on the same trip of cars with miners, and other storage and transportation safeguards are included. On-shift firing of permissible explosives or mechanical blasting device must be done in accordance with the standards for permissible explosives and blasting devices, detonators, and cables. Wooden tamponing bars must be used and the standard charge of permissible explosives is 1½ pounds, although 3 pounds may be used under certain conditions. Surface storage of explosives is in accordance with the requirements of the Federal Explosives Act.

## Timbering—

The adoption and enforcement of a systematic timbering plan, additional timbering when necessary, and frequent roof-testing by men and officials are among the requirements in the code.

## Rock Dust—

Water or wetting agents are to be used to control excessive amounts of coal dust caused in working places by cutting, drilling, loading, or other operations. All except wet mines must be rock-dusted to within 80 feet of the face of rooms and



International News Photo.

Pictured above is a view of the Straight Creek mining settlement in Pineville, Kentucky, where thirty-one men were trapped in an explosion.

entries. Rock dusting, which neutralizes the explosibility of fine coal dust, is a common practice in many American coal mines.

#### Transportation or Haulage—

Safety requirements in this phase of mine operations, which causes many injuries and deaths in coal mines, are covered in several standards for maintaining equipment and operating trips where men, coal, and materials are transported. Clearance along one side of haulage tracks must be a minimum of 24 inches between cars and the rib, or wall; and shelter holes for miners must be provided about every 80 feet along haulageways.

#### Electricity—

In mines where gas has been found, all new electrically operated face equipment bought after the code goes into effect must be of the permissible type.

This means that the equipment has been tested and approved by the Bureau of Mines and is constructed in such a manner that it will not ignite gas by giving off arcs and sparks. A number of manufacturers make this equipment under the Bureau of Mines approval seal, and it includes drills, cutting machines, loading machines, and others. If the permissible equipment is unobtainable at the time, this part of the code may be suspended until the equipment is obtainable. Explosion-tested cable-reel locomotives, and shuttle cars are excepted from the requirements.

Trolley and electric feeder wires cannot be installed in any part of the mine where the air is known to contain 1.0 percent or more of methane.

Where mine workings are 1,500 feet or more from the surface, telephone service must be provided.

Numerous other standards state the required safeguards for transformers, switches, cables, and other electrical equipment.

#### Fires and Disasters—

The code has many regulatory standards governing fire prevention and control, as well as procedure to follow in the event of a disaster, such as an explosion or fire.

#### Miscellaneous—

Permissible electric cap lamps for illumination are required in mines where gas has been found previously. All mines must have at least 2 escapeway openings. Mines producing over 1,000 tons daily must bring the mine map up to date every 6 months, and smaller mines must do this every 12 months. Provisions for safety clothing and goggles are included.

The Federal Mine Safety Code for Bituminous and Lignite Mines of the United States was formulated by Dr R. R. Sayers, Director of the Bureau of Mines. In this work Dr Sayers had the assistance of representatives of mine operators, the union, and the office of Admiral Ben Moreell, Coal Mines Administrator. The code is described by those who assisted in formulating it as "a milestone on the road that leads to making American mines the safest in the world."

# Why Safety Engineers Need Standards To Help Eliminate Unsafe Machines<sup>1</sup>

Support by policy makers of American Standards Association's safety program is recommended by Commander J. H. Mathewson, U. S. Navy, as means of control of potentially unsafe machines

In the case of many machines and machine tools marketed without adequate operating safeguards, the unsafe physical condition is traceable to a complexity of unsafe acts. In the main these are the policy of the manufacturer in making and marketing a machine not provided with known or obviously necessary operating safeguards; the attitude of designers who more often than not fail to consider safety of operation; and finally the buyer or user for purchasing such machines. When confronted with the problem, all three put up the same plea; namely, economy or competition.

A more elusive problem is the conversion of machines for purposes for which they were not designed. Without overlooking the built-in hazards in buildings and other fixed physical properties, this problem is closely related to the conversion of buildings or structures, or parts thereof, to house or accommodate operations not conceived by the original designer. In such instances, the safety man is often confronted with crowded conditions, inadequate exits, makeshift substandard stairways, poor ventilation, poor lighting, and a variety of other deficiencies contributing to what can best be described as an unsafe working environment.

The conditions and deficiencies just described are basic or fundamental in accident prevention. Furthermore, the over-all remedy is the direct responsibility of staff safety engineers and directors. At best, the safety man in the individual plant, station, or establishment can only cope with the situation within his own activity. All too often he is defeated because he cannot produce any authoritative standard to back up his suggested changes.

Just how should this broad problem be attacked?

Fortunately, the method is clearly defined and considerable progress has

already been made. The answer lies in the codes promulgated and issued, and those yet to be developed, by the American Standards Association. It is therefore of the utmost importance that the American Standards Association be given the complete support of all safety people at the policy-making level in each organization. Such support must include active participation in the preparation of codes embodying safety standards and the adoption of the codes by the member or subscribing organizations.

#### Three Types of Cement Covered in Specification

All federal purchases of portland cement will be made from now on under a recently issued Federal Specification, SS-C-192, the Procurement Division states.

Developed by the Technical Committee on Cement, Lime, and Plaster of the Federal Specifications Board, the new specification combines the requirements of SS-C-191b, SS-C-201a, SS-C-206a, and SS-C-211a which it supersedes, as well as incorporating several new practices.

Three types of cement are specified: the high sulfate resistance type which retards flaking and cracking of concrete in soils containing a high concentrate of sulfate; another having a low heat of hydration which prevents excessive generation of heat in thick sections with resultant weakening of structure; and the last containing the air entraining development. This is the first specification to provide for the latter feature.

When applied to highway pavements and other exposed structures, the new cement is expected to improve the resistance of concrete to repeated cycles of severe freezing and thawing, doubling the life of the exposed concrete and reducing the costs of maintenance.

Copies of SS-C-192 are available at the Government Printing Office, Washington 25, D. C., at 5 cents per copy.

<sup>1</sup> Abstracted from a statement by Commander J. H. Mathewson, U. S. Navy, published in full in the Washington Safety Society News Letter, March 15, 1946.

# New Standards from Other Countries

The following new and revised standards, received recently by the American Standards Association from other countries, may be borrowed by ASA Members from the ASA Library or purchased through the Sales Department.

Drafts of proposed standards from other countries are not for sale, but they may be borrowed.

## Australia

### Draft of Proposed Standard

Helmets, Handshields, Face Masks and Goggles for Protection Against Harmful Radiation, B99

## Great Britain

### New British Standards

Batch Type Concrete Mixers, BS1305: 1946

Cast Iron Street Lighting Columns, BS1249:1946

Domestic Gas Appliances for Immediate Post-War Housing: Part 1, General Specification Including Space and Rating Requirements, BS1250:1945-Part 1

Ferrous Traps for Baths, BS1291:1946

High Carbon Steel Gas Cylinders for Carbon Dioxide, Nitrous Oxide and Ethylene, BS1287:1946

Manganese Steel Gas Cylinders for Carbon Dioxide, Nitrous Oxide and Ethylene, BS1288:1946

Memorandum on Sampling Clauses in Specifications for Manufactured Articles, PD488:1946

"Ready-to-Fit" Thermal Insulating Materials for Hot and Cold Water Supply and Central Heating Installations for Small Dwellings, BS1304:1946

Sizes and Contents Arrangement for Manufacturers' Trade and Technical Literature (Building Industry), BS1311:1946

Tests for Use in the Training of Welders, BS1295:1946

Tins for Paints and Varnishes and Other Liquid Products of the Paint Industry, BS1262:1946

Welding Symbols for Shipyard Drawings, BS1303:1946

### Revised Standards Issued

Cast Iron Spigot and Socket Flue or Smoke Pipes, BS41:1946

Disinfectant and Sanitary Powders, BS1013:1946

Lead Pipes, Silver-Copper-Lead Alloy, BS1085:1946

Screw Threads for Copper Tubes, BS61: Part 2:1946

Steel Fishbolts and Nuts for Railway Rails, BS64:1946

### Drafts of Proposed Standards

Art Room Furniture for Schools, CH(BS/MOE)5585

Bevel Protractors (Second Draft), CH(ME)3306

Brickwork, CP(B)551

Cast Iron Pipe Fittings (Screwed BSP) for Automatic Sprinkler and Other Fire Protection Installations (Fourth Draft), CH(ME)4116

Clothes Line Posts, CH(B)3949

Copper Alloy Ingots and Castings, Comprehensive Schedule of, CH(NFE)4306

Copper Indirect Cylinders, CH(HIB)5321

Cotton Selvedge Tapes and Webbing for Electrical Purposes (Other Than the Manufacture and Jointing of Cables), (Revision of BS No. 633-1935), CH(EL)5057

Domestic Hot Water Supply By Gas (Schools), CP(B)550

GMS Indirect Cylinders, CH(HIB)5320

Handicraft Room Equipment for Schools, CH(BS/MOE)5584

Internal (Stick) Micrometers (Second Draft), CH(ME)3369

Micro-Chemical Carbon & Hydrogen Combustion Trains (Second Draft), CH(C)4204

Micrometers (External), CH(ME)3368

Portland Cement of Low Heat Hydration, CH(CEB)4874

## Foreign Language Standards

The following standards are available solely in the language of the country issuing them.

### France

A30-010, Produits sidérurgiques en acier non allié d'usage courant

A45-010, Produits sidérurgiques d'usage courant, en acier au carbone, laminés à chaud: Carrés

A45-200, Produits sidérurgiques d'usage courant, laminés à chaud: Poutrelles I PN

A45-203, Produits sidérurgiques laminés à chaud: Poutrelles de soutènement

A55-105, Demi-produits non ferreux: Plomb en saumons (ou lingots)

A67-101, Demi-produits non ferreux laminés à froid. Tôles et feuilles

A67-121, Demi-produits non ferreux laminés à froid: Bandes

Matériels de fonderie

A73-001, Cubilot: Terminologie

A73-002, Poches de coulée à balancier: Terminologie

A73-003, Convertisseur pour fonderie d'acier: Terminologie

A73-004, Four à métaux blancs: Terminologie

A73-005, Coupe-jets: Casse-gueuses mécanique—Terminologie

Levage et manutention

E52-101, Forces et portées des grues de faible puissance

### Sweden

#### New Standards Issued

##### Building

French Windows, Double Opening Inward: Details, SIS60 86 17

French Windows, Double Opening Outward: Details, SIS60 86 18

Windows: Nomenclature, SIS60 86 01

Windows and French Windows: Quality Standards, SIS60 86 10

Window Catches for Windows Opening Out, SIS60 86 31

Windows, Double, Opening Inward: Details, SIS60 86 14

Windows, Double, Opening Outward: Details, SIS60 86 15

Cap for 63 Mm Hose Coupling, SMS1175

Connections (Screw), Rubber Hose: SMS-1075; Nipples, SMS1076; Sleeves, SMS-1077; Wing Nuts, SMS1078

Cornwall Boilers, Riveted

Dimensions, Materials, etc—Working

Pressure: 8 kg/cm<sup>2</sup>, SMS865; 10 kg/cm<sup>2</sup>, SMS866; 12.5 kg/cm<sup>2</sup>, SMS-867

Location of Flue—Working Pressure: 8, 10, and 12.5 kg/cm<sup>2</sup>, SMS868

Electrical Engineering

Standard Circuit Breakers for AC Voltages of Minimum 3 kV, SEN31

Standards for Energy Meters for AC 50 Cycles/Sec: Single Tariff Meters for Effective Energy—1945, SEN 32

Grinding Wheels

Grinding Wheels for Internal Work, to Be Mounted Directly on the Arbor or Arbor Extension, SMS392

Grinding Wheels for Internal Work, to Be Mounted on a Grinding Wheel Centre, SMS393

Milling Arbors and Cutters

End Mill Arbors, Junction Dimensions of Short End-Facing Cutters, Binding

Screws, Spanners, SMS901

End-Facing Cutters, Short, SMS911

Shank End-Mills, Cylindrical, Single,

Short, SMS913; Long, 914

Shank End-Mills, Cylindrical, Double,

SMS915

Multitubular Boilers, Riveted

Dimensions, Materials etc—Working Pressure: 8 kg/cm<sup>2</sup>, SMS851; 10 kg/cm<sup>2</sup>, SMS853; 12.5 kg/cm<sup>2</sup>, SMS855

Location of Tubes and Longitudinal Stays—Working Pressure: 8 kg/cm<sup>2</sup>, SMS852; 10 kg/cm<sup>2</sup>, SMS854; 12.5 kg/cm<sup>2</sup>, SMS856

End Plates of Multitubular Boilers, SMS-857

Return Tube Boilers, Riveted

Dimensions, Materials, etc—Working Pressure: 8 kg/cm<sup>2</sup>, SMS858; 10 kg/cm<sup>2</sup>, SMS860; 12.5 kg/cm<sup>2</sup>, SMS-862

End Plates of Return Boilers, SMS864

Location of Tubes, Flues, and Longitudinal Stays—Working Pressure: 8 kg/cm<sup>2</sup>, SMS859; 10 kg/cm<sup>2</sup>, SMS861; 12.5 kg/cm<sup>2</sup>, SMS863

Saw Blades, Circular, for Wood: Cross-Cut Saws, SMS1301; Rip Saws, SMS1302; Rip Saws, Conical Blades, SMS1303; Smooth-Cutting Combination Saws, SMS1304; Types of Teeth, SMS1300

Vertical Tubular Boilers, Riveted

Dimensions, Materials, etc—Working Pressure: 8 kg/cm<sup>2</sup>, SMS870; 10 kg/cm<sup>2</sup>, SMS871

Location of Tubes—Working Pressure: 8

and 10 kg/cm<sup>2</sup>, SMS872

SMS Standard Fittings for Return Tube, Cornwall, and Vertical Tubular Boilers: Summary, SMS873

### Revised Standard Issued

Standards for Calculation of Physical Properties of Transmission Lines, 1945, SEN12

# How to Make More—With Less

*As an answer to the problem of making more goods at lower costs, standardization is one of the latest topics to be investigated by "Modern Industry" magazine. After a nationwide survey conducted by its editors, "Modern Industry" came up with case histories that support greater standardiza-*

*tion in order to boost productivity. These findings were first published in their issue of June 15, 1946; and INDUSTRIAL STANDARDIZATION has been granted the privilege of reprinting the results.*

*Says "Modern Industry"—*

**Standardization. That's the answer. Its advantages are overwhelming. But obstacles too often stand in the way. Here's how to break down the barriers, find new profits.**

**V**ARIETY may be the spice of life to Mr Average Consumer.

But to manufacturers it's a pain.

Standardization is good medicine for the ailment. And, today, a lot of companies that intend to stay healthy are swallowing it in big doses.

Typical case among many found

by *Modern Industry* editors is at National Cash Register Co, Dayton, Ohio. Here, clever redesign of cash drawers reduces from 64 to seven the number of different sizes that fit all machine models in the company's line.

NCR, like many others, is pushing similar efforts to squeeze out costly

and unessential variety by increasing the number of standard or interchangeable parts in its products.

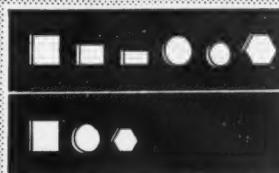
Like all worth-while projects, this one isn't easy. It takes vigorous top-management support. It demands teamwork of all plant departments.

Salesmen's good will is vital. They must be shown how it meets the actual needs of the customer who, in the long run, will be better satisfied because standardization gives him higher-quality products at the lowest possible costs. These pictures tell why and how.

## Eight reasons why to standardize

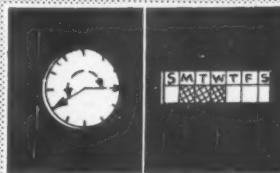
### 1. Fewer raw materials

Purchases are made in greater volume at lower unit cost; opportunities for errors in picking items from stock are far less.



### 2. Longer runs

Machines, once set up, can keep going on same item for days instead of hours. Special tooling adds both speed and accuracy



### 3. Shorter setup time



For processing identical products, factory operations may be combined so that fewer machines have to be prepared for action.



Operations can be continuous with differences in final product added only in final stages of processing or assembly work.

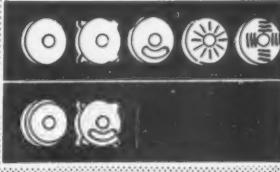
### 4. Smoother production flow

Time-taking extra steps are removed from the sequence of operations; workers are not slowed down by a lack of uniformity.



### 5. Smaller parts inventory

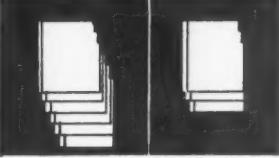
Less variety simplifies controls; turnover at faster rate makes obsolescence less of a worry; handling is a much easier job.



### 6. Better quality control



Heavier volume of duplicate pieces to be checked makes it economical to use costly but ultraprecise testing devices.



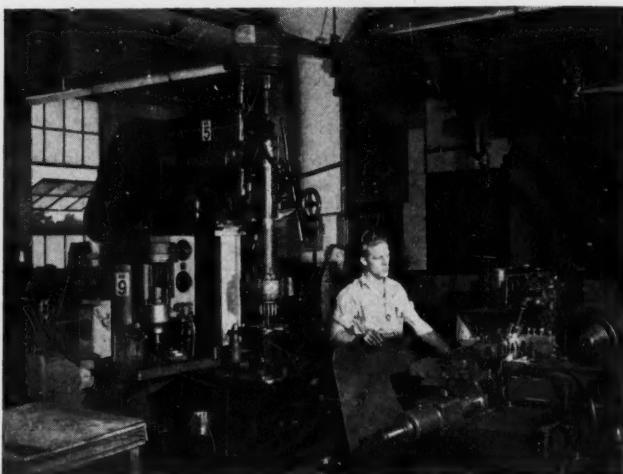
### 7. Less paper work

Volume of individual shop and purchase orders shrinks; chances for mistakes are lessened in office, shop, and lab memos.

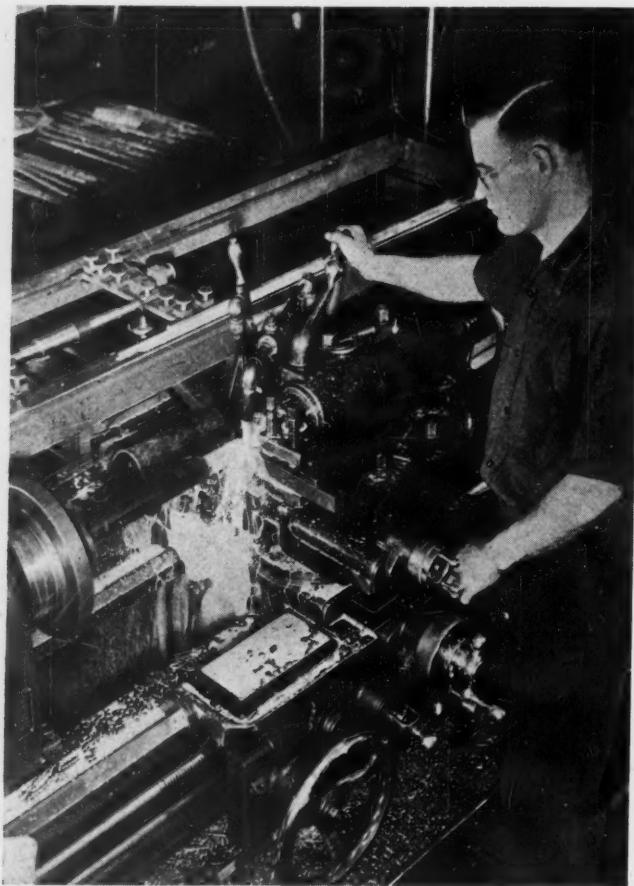
## Here's what all-out



PRODUCT DEVELOPMENT GROUP, meeting after hours during war, gave Reliance Electric & Engineering Co., Cleveland, start on standardization. These photos reveal results.



COMPACT LAYOUT groups these three machines to do bulk of work on bearing caps. Space-saving arrangement is made possible by switch to single-cap type that takes place of four varieties.



TOOL GUIDES on lathes, set up in rear, typify shop changes brought by standardization. New attachments permit one operator to take care of two machines. Shafts for motors, now redesigned to fit many different models, are turned out at lower cost and higher accuracy.

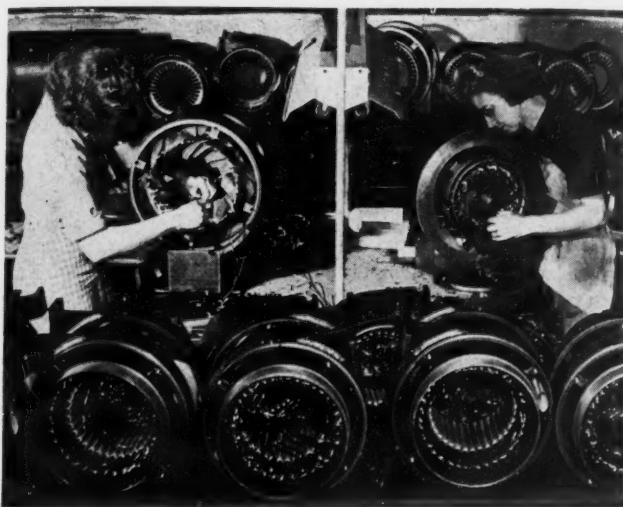


SPECIAL-PURPOSE EQUIPMENT usually is economical only for long runs, especially in small plants. But standardization of motor frames allows use of this "Rube Goldberg" for drilling majority of sizes in product line.



STANDARD METHODS follow parts standardization, simplify such tasks as time study, rate setting, and training. Here, girl slides coils from form on which 12 coils are wound at once rather than by one-at-a-time method.

## standardization can do



**NO BACKACHES** plague workers on this job. Because motor frames now are identical, they can be handled on work-holding fixtures. Women formerly found it awkward to adjust position of frames while inserting the windings.



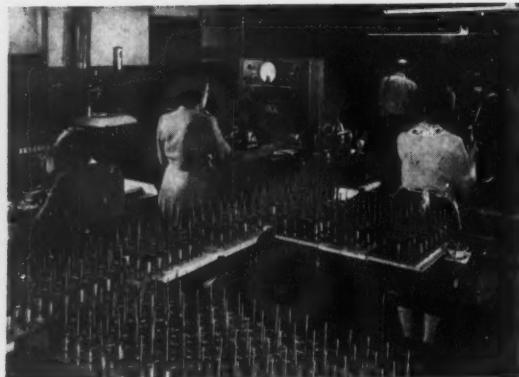
**FEWER SMALL TOOLS** are required for assembly when number of different types of fasteners is reduced. Task shown above calls only for a screw driver and wrench. Users of final product benefit from simpler maintenance.



**VARIETY OF MOTORS** actually grows despite standardization which, on some lines, cuts variety of raw materials and parts by 50 percent. Ingenious redesign allows many combinations of identical items to fill customer demand. Reliance estimates sales of standard models at 50 per-

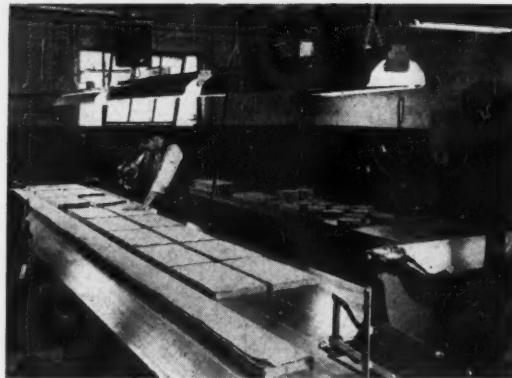
cent, recurring special models at 35 percent, and special models at 15 percent. The program that achieves this stresses the need for effective teamwork of top management, sales, design, purchasing, manufacturing, and service personnel.

## Getting greater productivity in your plant



**BETTER QUALITY** is logical by-product of standardization which allows use of costly test devices like armature balancer, above, at Eureka-Williams Corp., Detroit. Larger volume of identical parts well justifies the high investment.

**COSTS GO DOWN** as a natural effect of making more pieces exactly alike. Mass-production techniques can be adopted. Good example at Eureka-Williams, above, applies textile-industry methods to cut cloth for vacuum-cleaner bags.



**MORE MODERN MACHINES** can be bought when volume of identical parts being made steps up. This new Kingsbury machine at The Electric Auto-Lite Co., Toledo, mills, drills brass inserts in standard plastic distributor caps.

**LESS WASTED EFFORT** is benefit gained at The Electric Auto-Lite Co., by holding to minimum different types of screws, washers, nuts, and bolts. Fewer varieties mean a much greater chance to use motion-saving workplace setups.



"During the war we got out of the habit of thinking about standardization. Whatever was needed, we made."

These words come from a top engineer for a large parts supplier to the highly standardized automobile industry. But what he says holds true for all sorts of companies, whether they make textiles or furniture.

Fresh stress on standardization will improve every phase of plant operations. Furthermore, fewer sizes and types of raw materials purchased outside and parts processed inside automatically wipes out the need for innumerable petty decisions that waste management's time.

### Within-a-Company Standardization Relieves Pressure on Executives

Howard Coonley, new Executive Committee Chairman of the American Standards Association, states from his experience as head of Walworth Company that this kind of within-a-company standardization "helps to relieve pressure on executives up and down the line. It cuts down on the number of conferences, on controversies in the operation of the plant, and on dissatisfaction among customers. And it simplifies selling."

To win these advantages (and others highlighted in the chart on p 225), The Electric Auto-Lite Company created a new department. Headed by the company's former chief engineer, it gets the job of reviewing all products to ferret out every possible way to eliminate variety in product components from bearings to brackets.

Moves like this go far to boost productivity, put profits in businesses now otherwise strait-jacketed by costs of materials and manpower.

"Make more of the same" is a timely motto that points the way to higher-quality products at lower costs.

### Elimination of Unnecessary Variety Makes for Profitable Operations

Throughout industry are countless cases where needless variety sneaks into product lines merely because of the personal whims of salesmen, designers, and customers. And any plant automatically heads for more profitable operations when it rids

## The idea works—on rayon reels or steel trusses



**FLEXIBILITY & EFFICIENT MAINTENANCE** result from standard thread-reels at Industrial Rayon Corp., Cleveland. Parts are interchangeable, fit reels for different functions.



**BROADER USE** for standard steel trusses comes from redesign in 50-, 60-, 70-, and 80-ft spans. H-beams are simply cut to length and welded. Designs can be adapted to various loads without changing shop details.

### Modern Industry Check Chart

#### Seven ways to get started on standardization

1. Encourage and support efforts to promote standardization within your industry.
2. Review with suppliers the possibilities for purchasing items in fewer varieties but in greater volume.
3. Enlist the active interest of all plant people in company standardization efforts.
4. Get your own customers to agree on changes in the products you sell to permit wider use of interchangeable and identical components.
5. Set up an alert organization to tackle the task of eliminating superfluous variety and to guarantee continuous, careful scrutiny of this problem.
6. Study opportunities for standardization, not only in the products you sell but also in such purchased materials as maintenance and first-aid supplies.
7. Start now, if only in a small way, to push standardization in your plant so that its benefits will be yours when the business of making a profit really gets tough.

plant facilities must at all times be ready for adoption of better materials, methods, and devices.

At Allis-Chalmers Manufacturing Company, Milwaukee, a *Book of Standards* helps to keep sizes and kinds of materials to a minimum without hampering flexibility. All standards developed or adopted by the company are described in this book under four classifications: Parts, Engineering Data, Shop Practice, and Tools. This loose-leaf book is kept up to date, gets used by all engineering departments in designing new machinery or improved old designs.

It costs money to do this kind of work. But it's essential if your standardization program is to be really effective.

#### What to Look for In Household Appliances

A symposium on the properties to be considered in buying household appliances and home equipment, published in the March issue of the *Journal of Home Economics*, may be useful to sectional committees preparing standards for consumer goods.

Reprints of the symposium, entitled "If You're Shopping for Home Equipment," are available at 15 cents each from the American Home Economics Association, 620 Mills Building, Washington 6, D. C.

itself of this Topsylike accumulation of differences in sizes, shapes, colors, and other qualities.

Not all specialty items can be wiped out, of course. Some must be continued to fill orders for replacement or maintenance, or for old-line

customers who insist on exactly the same product they've always bought.

Obviously, too, standardization of this kind can be overdone. There's real danger in eliminating variety to the point where flexibility of manufacturing is lost. Plant people and

## Dated Seeds Standardize Quality of Cotton

The quality of Egyptian cotton is to be controlled more rigidly by the introduction of a new plan called the "Dated Seed System". The Cotton Research Board Test Mill at Giza, Egypt, is responsible for this development and it will be applied to all varieties of the new crop.

The *Journal of Commerce*, in announcing this action, declares that the new method provides for the "labelling of seed for the Egyptian crop according to the year in which it was issued by the plant breeders at Giza. After a set number of years, seed will not be certificated. Only certified seed may be sown in Egypt."

This is not the first attempt to standardize the quality of Egyptian cotton. In Karnak staple, for a number of years, the lint from every lot of seed intended for sowing has had to pass government standards before the grower may use the seed. Samples of seed cotton are also sent to the Cotton Research Board Test Mill where the cotton is spun and the thread strength is measured. If the strength fails to meet government standards for Karnak, the seed is refused a certificate and must be used for crushing, instead. For technical reasons, however, this test method cannot be applied to all types of cotton.

## Canners Association Revises Labeling Manual

A revised and extended list of terms for use on canned goods labels to eliminate misunderstanding or confusion has been recommended by the National Canners Association as a supplement to the 1942 edition of its Labeling Manual. The supplement supersedes Sections III and IV of the earlier edition and brings up to date the recommendations for voluntary labeling. The new Section III gives the legal requirements for labeling each individual fruit and vegetable, emphasizes the recommendations made for the common use of one label term in those cases where Federal Regulations provide several optional synonymous statements to state the same fact. Section III also gives the additional voluntary labeling statements which are the joint recommendations of the Canners Association and the distributor groups.

Additions to the 1942 edition include recommendations for the ripeness of peaches and apricots and for workmanship factors in canned peas. Some of the previous recommendations have been withdrawn. The maturity statements for green and wax beans have been temporarily withdrawn pending the anticipated action by the Food and Drug Administration in issuing a Standard of Quality for these products, the Association announces. Section IV provides revised definitions and standards as a guide to the use of the voluntary label statements.

## Standard Test Shows Fire Resistance of Floors

Experiments have recently been conducted at the National Bureau of Standards to estimate how long heavy timber construction can withstand fires of the severity used in the stand-

ard furnace test for fire resistance. In an article appearing in the NBS *Technical News Bulletin*, it was shown that the limit of resistance of such floors, with the lower face exposed to fire, is determined either by failure under representative working loads or by occurrence of flame or ignition of combustible material on the upper side.

With a 1-inch finish floor on top, the fire resistance of laminated floors of 4-inch planks on edge averaged 45 minutes; with 6-inch planks, a little over 1 hour; and with 8-inch planks, about 1½ hours. With the structural portion of the floor of tongued and grooved plank of 3-inch nominal thickness laid flatwise, the fire resistance was approximately 45 minutes. Impregnation of the wood with fire-retarding chemicals increased the fire resistance of 4-inch floors by about 15 minutes. A comparable increase was obtained with a heavy coating of a fire-retarding compound on the lower surface.

## Federal Specifications Board Plans Code for Marking Gas Cylinders

THE development of a color code for marking compressed gas cylinders is one of the projects under consideration by the Federal Specifications Board, and its progress was a principal point on the agenda of a recent joint meeting of that body and the Industry Advisory Council.

The Technical Committee on Chemical Products of the Federal Specifications Board will receive recommendations submitted by a subcommittee which has been formed to make a thorough investigation. Members of the subcommittee are representatives of the organizations concerned. After action by the Committee, the proposed color code will be submitted to industry, technical societies, and trade associations for comment.

The subcommittee has studied American Standard Method of Marking Compressed Gas Cylinders to Identify Content, Z48.1-1942, and Simplified Practice Recommendation R176-41, Color Marking for Anesthetic Gas Cylinders, issued by the National Bureau of Standards and advocates a more comprehensive system than that described in either document.

The American Standard requires that compressed gas cylinders be legibly marked for identifying the gas content, either with the chemical or trade name of the gas, such marking to be accomplished by stenciling, stamping, or labeling. It provides for no marking requirements, but calls attention to R176-41.

The description of colors (by name alone) in R176-41, which lists recommendations for color or color combinations to be used on anesthetic gas cylinders for anesthetic machines, is not considered adequate for the marking of large cylinders containing technical or industrial gases.

A system such as that used by the Navy is under consideration, whereby the colors will be definitely specified either in terms of fundamental units or by pigment formulation of the coatings.

It is the subcommittee's belief that the added safety measure resulting from standard color marking of cylinders amply justifies such a system for governmental procurement, especially since the armed services are the owners of the vast majority of the compressed gas cylinders which they use.

# Colleges Urged to Teach Standards

By G. M. Aron

**Colleges should teach principles of standardization along with elements of engineering to encourage application of standards in design and manufacture**

EVERY engineering student needs to be introduced to the principles of standardization—whatever branch of the profession he or she has chosen. The practicability and economy of standardization, with its related interchangeability and simplification, must be made plain in the beginning, must be frequently referred to, and must be finally emphasized before the student leaves to take his first place in industry. The fact that at the present time there is a serious deficiency in the individual's working knowledge of standardization is evident in the lack of application of standards in American plants.

Relatively few designers and shop supervisors have more than a hazy knowledge of the work of the standards institutions in their own fields and do not know where standards originate, what they cover, and how they are kept modern. This is because such men have not been instructed in the first principles of the subject.

## Management's Lack of Instruction Results in Poor Standards Practice

This lack of instruction is also unquestionably evident in the paucity of standards practice in the engineering and shop departments. The layout and detail draftsmen have little incentive in the practice of standardization; the general procedures established by engineering and shop management require little use of the standards already written, largely because management itself has had little or no instruction in standardization.

College is the place and time for such instruction—now badly needed to meet a deficiency in effective standardization in American industry.

The first college year is not too

early to begin the first instruction, for standardization is a design fundamental, as practical as stock control or precision inspection in producing a highly serviceable assembly.

It is as necessary for a detailer to develop facility in the use of standard units, in a knowledge of sizes of fabricated raw materials, in the use of all usual cutting tools, of screw thread standards, and the like, as it is for him to develop facility with his slide rule. The fact that many young engineers are not acquainted with accepted engineering handbooks, and with lists of drill, reamer, and common cutting tool sizes with accepted tolerances, is evidence that little if any of these were ever used or even spoken of in the classes.

For the present it might be advisable that engineering college faculties arrange for an introductory demonstration in standardization by a practicing Standards Engineer from a nearby industrial plant. The subject itself is rather dry, having little creative interest compared to that of laying out a bridge or an internal combustion engine. Therefore, the student needs to see what industry must go through to develop a good standard. It should be made plain that, after all the data on the design and manufacture have been collected, the development of a standard—for example, a screw thread series—is finally a problem in compromise. The final choice of the elements and scope of the standard is the result of give and take by the proponents in consultation.

Because life is movement and change, standardization cannot and must not be stagnation, but rather simplification—holding some factors fixed for a time while other elements are being advanced. The time always comes when the whole standard must be scrapped and replaced by a new one. The college student is perhaps better able to see this than many who



**G. M. Aron** is a prominent standards engineer in the aircraft industry. He is active in the National Aircraft Standards Committee as well as being responsible for the standards work of his own company, the Northrop Aircraft Corporation.

have spent years in the drafting room and shop. The fixed position of a good standard is temporary.

Perhaps the best reason for standardization is economy of time and materials, and the recognition of the importance of this must be encouraged before the student is ready for his first job. All cost accounting seeks to encourage economy and will encourage standardization only when costing is more thoroughly brought into engineering offices. The student can understand this and the point should not be missed in his course.

Actually there are a large number of men who work at standardization, interchangeability, and simplification in almost all American industries. The American Standards Association, at the top of all industries' standardization, the National Bureau of Standards in a similar position for Federal Government Departments, the Aeronautical Board for the Air Services, are important in the top level.

However, there is still a wide field where the benefits of standardization have not yet been thoroughly realized. More attention to standardization in college engineering courses would go a long way toward sending young engineers into their first jobs with an understanding as to how the tools of standardization can be used for more economical and effective industrial engineering.

# Annual Meeting of ASTM Adopts 42 New Standards

WITH 44 new tentatives, approved and 42 specifications and methods of test adopted as standard, the American Society for Testing Materials considers its 1946 Annual Meeting a definite success. Convened in Buffalo throughout the week of June 24, the occasion was marked by an intensive display of interest and activity, well in keeping with the Society's rapidly expanding work on specifications and tests for materials and methods of evaluating assemblies of these materials in various forms, the Society announces.

In addition to more than 200 meetings of technical committees, outstanding events on the agenda included eight technical symposiums which covered bearings, gas turbine materials, fatigue, spectroscopic light sources, oil procurement practices, testing parts and assemblies, pH measurements, atmospheric weathering of corrosion-resistant steels, and freezing-and-thawing tests of concrete.

In addition to these, there were other sessions devoted to such topics as the effect of temperature on metals, cement and concrete, plastics, nonferrous metals, bituminous materials, etc.

Committee D-1 on Paints, Varnish, Lacquer, and Related Products ar-

ranged an informal meeting at which several papers on paint were presented. This group is to sponsor the 1947 symposium dealing with the evaluation of paints and paint materials at the spring meeting in Philadelphia.

The Symposium on Testing Parts and Assemblies was held jointly with the Society for Experimental Stress Analysis which met in Buffalo during the same week. The ASTM has an administrative committee in this field which is planning and supervising the expansion of work as rapidly as possible in order that recommendations on how to evaluate materials assembled in a structure may result.

Dr J. J. Mattiello, technical director, Hilo Varnish Corporation, gave the Edgar Marburg Lecture on "Protective Organic Coatings as Engineering Materials". The Annual Meeting Dinner was highlighted by addresses on "The Challenge of National and International Affairs to the Engineer", by J. R. Townsend, retiring president of ASTM, and on "A Testing Time for Canada", by Dr B. K. Sandwell, editor of the Canadian publication, *Saturday Night*.

The nineteenth award of the Charles B. Dudley Medal was made to H. R. Copson, research chemist, research laboratories, The International Nickel Company, Inc.



## Book Marks

**Standard Practices for Stationary Diesel Engines** (Diesel Engine Manufacturers Association, One North La Salle Street, Chicago 2, Illinois, \$2.50)

Delegated representatives from member companies of the Diesel Manufacturers Association have combined their efforts in revising this book. Originally printed in 1935 under the title of *Standard Practices*, the new edition has been completely rewritten to incorporate progressive developments which have occurred within the industry during the past decade. It is designed primarily for consulting engineers, buyers, users, and manufacturers of Diesel engines, engine parts and accessories, and as a reference for colleges and universities teaching mechanical engineering. The book is illustrated by 25 drawings and charts.

### UNSCC Asks Data On Use of Term "Rayon"

Information regarding the use of the word "rayon" in various countries is being sought by the United Nations Standards Coordinating Committee. A questionnaire has been sent to Australia, Belgium, Brazil, Canada, Chile, China, Czechoslovakia, Denmark, France, Great Britain, Mexico, Netherlands, New Zealand, Norway, South Africa, and the United States.

According to the American Society for Testing Materials, this action is understood to have arisen from the proposal of the British Unification of Testing Methods Committee that the term "rayon" be extended to cover all man-made fibers. American usage confines the word to cellulose-based yarns.

### Oil Company Standardizes Aviation Gasoline

Standardization of aviation gasoline on a national basis, similar to that prevailing in the automotive field, has been announced by the Socony-Vacuum Oil Company, the *Journal of Commerce* reports.

Three popular commercial grades are to be marketed from coast to coast, the article declares. Mobilgas Aircraft 80 is designed to meet the needs of private fliers whose engines require 73 and 80 octane anti-knock fuel, while Mobilgas Aircraft 91 and 100 are for commercial operators and certain privately owned planes using 91 octane fuel. Better volatility and better anti-knock characteristics are among the improvements which the company cites for its new aviation gasolines.

**Recommended Practices for Automotive Flash-Butt Welding** (American Welding Society, 33 West 39th Street, New York 18, N. Y., 30¢)

Prepared by the AWS Automotive Welding Committee and based on a survey of flash-butt welding as used by the automotive industry, this booklet is an adaptation of the fundamental data on flash-butt welding originally published in the Society's "Recommended Practices for Resistance Welding". Included are sections on automotive-type steels; flash-welding equipment; design considerations; tooling; welding technique; and inspection. Typical automotive flash-welding assemblies showing both good and poor joint designs are illustrated by sketches taken from actual production drawings.

# Are State Safety Standards Legal?

Assistant Attorney General of the State of Maryland analyzes action of state commission in adopting American Standard safety codes and decides that standards prepared under ASA procedure are "reasonable" standards under meaning of the State law

**By Joseph E. Buscher**

We have been asked here to discuss the legality of the safety codes as adopted by the State Industrial Accident Commission of Maryland. Investigation discloses that the safety codes were formulated under the procedure of the American Standards Association. These codes were adopted pursuant to the Act of the Legislature in 1929, with slight amendments in 1943. The State Industrial Commission is thereby authorized and directed to formulate reasonable rules and regulations looking to the establishment and maintenance of conditions of safety and to the prevention of accidents in occupations covered by this Act.

The question of the codes adopted by the SIAC, pursuant to this Act, is before us now. First of all, let us see if these codes are reasonable, because the Act says they must be reasonable regulations.

Let us look at the American Standards Association. This is an organization with headquarters in New York City; it has some 85 national member bodies and more than 2000 member and associate member companies. These include technical, industrial, governmental, insurance, and other bodies all over the United States. The purpose of the ASA, which is supported by contributions from its members, is to promote the development and use of standard operating procedures to eliminate hazards which may cause industrial injuries. It acts as a national clearing house for safety regulations. The organization was established in 1918 because of problems faced by industrial plants after the first World War.

The safety codes in question are formulated by a committee, or committees, of the ASA. The committees are made up of experts, loaned by member companies, who have special knowledge valuable in consideration of the problem at hand; great and painstaking effort goes into the development of the code. It may take two years to write a single code

for a single industry. Upon completion of the writing, the code is then submitted to the association members as a whole, for their approval. After final approval, which may come only after several revisions, the code is published and made available to the public.

Let us see which states have joined Maryland in adopting, in whole or

*Joseph E. Buscher, Assistant Attorney General, the Maryland State Law Department, presented this analysis as to why the Department considers American Standard safety codes adopted by the State Industrial Accident Commission of Maryland to be legal before a meeting of the Safety Engineering Club of Baltimore.*

in part, the ASA codes. These are: Arkansas, California, Illinois, Kentucky, Michigan, New Hampshire, New Jersey, New York, Ohio, Oklahoma, Pennsylvania, Washington, and Wisconsin.

It seems reasonable to assume that codes formulated by such painstaking effort by so many interested parties, and which are used by so many states, should be reasonable within the meaning of the Act of the Maryland Legislature, and we, therefore, conclude that they are.

The question now arising is whether the delegation of authority by the State Legislature, to the SIAC, to formulate these codes is a legal one. This is an old question of legislative authority; it has been before the courts on many occasions. The Maryland Court of Appeals in its opinion in the case of *Downes vs Crane*, gave information that our question, I think, properly comes under. I quote, "It has also been settled by numerous decisions that the State may delegate police power to sub-

ordinate boards and commissions, and a reasonable and just exercise by them of the delegated power will be upheld."

The delegation of power to formulate reasonable rules for the prevention of accidental injuries and the safety of employees is sufficiently within the police powers of the State of Maryland, and as such, I feel that it follows under the law as laid down by the Maryland Court of Appeals in the *Downs* case.

Now the next question that opponents to the statute would bring up is whether it is constitutional, because of the discrimination against certain classes or individuals. They may say the codes discriminate against certain industries, certain individuals, against employers and not against employees, etc. I would like again to quote from a decision of the Maryland Court of Appeals concerning this problem. In this case the statute in question was one which imposed certain regulations and restrictions against plumbers as a class. It was charged that such restriction and regulation was unconstitutional. The Court said, "As to the common and ordinary occupations of life little or no legislation may be necessary, but if the occupation or calling be of such a character as to require a special course of study or training or experience to qualify one to pursue such occupation with safety to the public interest, no one questions the power of the Legislature to impose such restraints and prescribe such requirements as it seems proper for the protection of the public against the evils resulting from incapacity and ignorance. And neither the 14th Amendment of the U. S. Constitution nor the 23rd Article of the Bill of Rights of the Constitution of Maryland was designed to limit or restrain this exercise of power."

The courts of all states, as well as the Supreme Court of the United States, have always construed liberally all legislation under the various

Workmen's Compensation Acts in favor of the employee. Verifying this I quote from the Maryland Court of Appeals, which in turn had quoted from the Supreme Court, "That it had more than once been recognized as a fundamental proposition that persons and property are subject to all kinds of restraints and burdens to secure the general comfort, health and prosperity of the State." Today in the *Daily Record*, I read an opinion from the Court of Common Pleas in Baltimore. In that case an excerpt from an opinion of the Maryland Court of Appeals handed down on the ninth of January of this year was cited: "The Workmen's Compensation Act is essentially social legislation and the provisions thereof are to be liberally construed. It must be interpreted to effectuate its general purpose and not strictly construed."

The only other question that I can see that can be raised against the validity of this statement is that the Legislative Acts of 1929 prescribed that the SIAC shall formulate such rea-

sonable rules and regulations, etc, and in the present case the SIAC has not formulated rules, but has adopted rules that are formulated by the ASA. Surely it would seem unreasonable for the Legislature to expect the SIAC to formulate rules for each industry in Maryland when such rules have already been formulated and are found to suit the needs of Maryland, and are applicable to Maryland. I see no reason why the State of Maryland cannot adopt these rules. In discussing this with Senator Curran, he pointed out that many times existing rules are adopted by a body rather than formulated by the body itself. One example is the case of Montgomery County where the commissioners adopted the Building Code of Washington, D. C.

In furtherance of the thought, it should be pointed out that the Act of 1929, amended 1943, did not give the SIAC the funds to formulate the rules for the safety codes. Indeed, Chairman Emanuel Gorfine, SIAC, pointed out he does not even have funds to have the codes printed, that,

with the cooperation of the Safety Engineering Club such funds were sought at the time of the last meeting of the Legislature. This, however, was not granted.

In summation, we contend the codes are reasonable because of the effort and research that goes into the development of the codes, and because of the wide diversification of interest of the approving member organizations. Under the decision of the Maryland Court of Appeals we feel the Legislature is authorized to authorize the State Industrial Accident Commission to formulate reasonable codes, and they are not unconstitutional because of discrimination; and, finally, we feel the Commission is surely authorized to formulate or adopt or, in any other manner they see fit, set forth safety codes, and the same shall become the law of Maryland.

In short, the office of the Attorney General thinks the codes adopted by the State Industrial Accident Commission, as formulated by the Commission, are legal.

## A Standard to Uphold

This article first appeared as an editorial in the June issue of the "Safety Bulletin," a monthly publication of the Safety Division of the United States Employees' Compensation Commission.

"Invariably, when a disabling injury occurs to a workman, the family at home rightfully grieves and hopelessly ponders the question, 'Why did this have to happen to us?' In the factory, shop, or office where the damage was done, fellow workmen talk endlessly of the things that might have saved misguided Mike from the painful injury. Meanwhile, the Boss is engrossed in rehashing the thing on paper, filling out injury reports, and thinking up logical explanations which he hopes will satisfy the Safety Department. This routine appears often to be 'standard procedure'.

"Today our thoughts turn to a more constructive standard procedure, one which we believe is being overlooked by numerous individual safety engineers in both Industry and Government. The keynote to this procedure was again sounded at a

recent annual meeting in New York of that renowned organization known as the American Standards Association. This Association, you may recall, has, for the past 27 years, served as a federation of manufacturers, distributors, consumers, and governmental agencies, with the designed purpose of developing practical rules or standards for an endless variety of industrial processes and products.

"Wisely dedicated to the principle that nothing should be standardized merely for the sake of standardizing, its codes are as dynamic in nature as they are democratic in development. The chief aims are simplicity and clarity of specifications, economy of operations, and the safeguarding of persons and property. It is interesting and significant to note that of the 535 standards adopted during the recent wartime period, at least 25 percent deal directly with the safety and protection of workers. Many of the thousands of American Standard codes form the basis of State and Federal industrial regulations, while others are excellent back-

ground material for the optimum development of accident prevention programs and encouragement of better labor relations.

"No better standard could one hope to uphold than to have each safety engineer of the Federal Government become fully acquainted with and guided by, wherever practicable, the American Standard codes, thereby avoiding the regret, face-saving, and futile gestures which too frequently follow preventable accidents."

### California City Uses Safety Standards

Safety standards set up by the American Standards Association and the Underwriters' Laboratories will now govern all electrical appliances for sale in Oakland, California, *Electrical Merchandising* reveals.

In a new city ordinance designed to help in the prevention of fires, it has been stipulated that electrical equipment must hereafter conform to the above specifications.

# Bureau of Standards Organizes Radio Work in New Division

Central Radio Propagation Laboratory will coordinate radio work; Electrical Division is reorganized, with F. B. Silsbee as chief; E. C. Crittenden is now Associate Director of Bureau

**R**ORGANIZATION of the electrical and radio work of the National Bureau of Standards was completed recently, coordinating the radio work of the Bureau in one division and revising some of the work and setup of the Electrical Division. E. C. Crittenden, for 25 years chief of the Division of Electricity, has relinquished this part of his duties in order to devote his full time to his increasing responsibilities as Associate Director of the Bureau. In his place, F. B. Silsbee has been named chief of the division.

## Radio Measurements, Ballistics Transferred in Reorganization

Changes in the work of the Division of Electricity included merger of the measurement work of the former Section on Radio Measurements with the work of a new Central Radio Propagation Laboratory; and transfer of the work on interior ballistics for the Navy Department to the Ordnance Development Division. This latter move helps to concentrate the military work of the Bureau into a single division.

The radio work of the Bureau is now coordinated in a Central Radio Propagation Laboratory, established May 1, known as Division 14. This division will be responsible for all radio activities in the Bureau except the electronics work of Division 13—Ordnance Development.

Dr J. Howard Dellinger has been designated chief of the new division. He joined the staff of the Bureau in 1907 and became head of its Radio Section in 1919. Dr Dellinger is past president of the Institute of Radio Engineers and a recipient of its Medal of Honor. Dr Newbern Smith, designated as assistant chief, who has been with the Bureau since 1935, has gained world reputation for his work on determination of radio propagation conditions from ionospheric data.

The groups to coordinate radio

activities through the new Central Radio Propagation Laboratory are the National Bureau of Standards, Army, Navy, Army Air Forces, Coast Guard, Federal Communication Commission, and the Radio Technical Planning Board.

The new division's chief emphasis will be on ionospheric and tropospheric propagation research. The ionosphere is the upper region of the atmosphere ranging from 50 to 250 miles above the earth. Shortwave radio communications pass through this region. The troposphere is the lower atmospheric level extending up to seven miles.

All activities of the Radio Section of the Electricity Division have been transferred to the new division. During the past four years a large part of the Radio Section's work has been the operation of the Interservice Radio Propagation Laboratory for the Joint Communications Board of the Joint Chiefs of Staff. This laboratory developed research methods for the study and forecasting of conditions in the ionosphere based on data obtained from a chain of stations throughout the world.

## Radio Communication Conditions Forecast by Laboratory Research

These data provided a basis for forecasting radio communication conditions as long as three months in advance as well as for shorter periods. These predictions indicated how different wavelengths could or could not be used at certain times of the day and seasons of the year at various places throughout the world. A beginning had been made in this field of research by the Radio Section years before the United States entered World War II. The wartime forecasts were widely used by United States and Allied forces, by other Government agencies, and by private communications companies. They were vital to military operations, particularly in the air.

Some of the stations which provided data for the forecasts were operated by the Army and Navy and others by contract for the National Defense Research Committee. The National Bureau of Standards operated its own station at Sterling, Virginia. Ultimately, stations operated by the military services or under contract will be staffed by the Central Radio Propagation Laboratory.

The newly established laboratory represents a consolidation of activities. It will take over certain activities from the Army and Navy and the Carnegie Institution of Washington and will collaborate closely with the Federal Communications Commission and other Government agencies. It also will take over certain activities from private industry, which urged that the work be consolidated in one bureau and suggested that the National Bureau of Standards was the logical place for it.

## Radio Propagation Executive Council to Guide New Bureau Division

The work of the new division will be carried on with the advice and guidance of the Radio Propagation Executive Council, made up of representatives of interested Government agencies and industry.

The Central Radio Propagation Laboratory will consist of the following sections:

1. Basic Ionospheric Research
2. Basic Microwave Research
3. Regular Propagation Services
4. Frequency Utilization Research
5. Experimental Ionospheric Research
6. Experimental Microwave Research
7. Regular Propagation Measurements
8. Ionospheric Measurement Standards
9. Microwave Measurement Standards

## New Section Chiefs in Division of Electricity

The various sections of the Division of Electricity are now headed by the following: Resistance Measurements, J. L. Thomas; Inductance and Capacitance, Charles Moon; Electric Instruments, F. M. Defandorf; Magnetic Measurements, R. L. Sanford; Underground Corrosion, K. H. Logan; Electrochemistry (Batteries), G. W. Vinal.



## News from other countries

### Visitors from Belgium, Holland, Uruguay Welcomed by ASA

**A**MONG the numerous visitors to the offices of the American Standards Association during the past few months have been representatives from Holland, Belgium, and Uruguay. All are associated with the national standardizing bodies of their respective countries.

President of the Netherlands Standards Association is Donker Duyvis, who is also general secretary of the International Federation for Documentation and a member of the Netherlands Patent Office.

He has, for several years, been concerned with international work in the library field, which, before the war, was conducted under the auspices of the International Standards Association (ISA). American cooperation with this ISA work was through the ASA Sectional Committee on Standardization in the Field of Library Work and Documentation,

Z39, sponsored by the American Library Association. During World War II, ISA operations were suspended. Plans are now being made to revivify international cooperation, however, and Mr Duyvis is greatly interested in any American plans for participation.

Mr Max Meeus, visitor to the ASA from Belgium, is a member of the new Belgian standards group, Institut Belge de Normalisation, which has just been organized under governmental control.

The Instituto Uruguayo de Normas Técnicas has sent two official representatives to America:—Julio Laporte, a petroleum chemist who is especially interested in fire protection for oil tanks, storage reservoirs, etc.; and Julio Bauzá, an architect, who is concerned with developments in prefabricated housing. Both are vice presidents in the Uruguayan organization.

### Large-Scale Standards Work in Russia

The All-Soviet Standards Committee, national standardizing body for the USSR, reports that it now has 200 engineers on its staff, and that its activities cover all the engineering and technical fields. This includes agricultural machinery and products, mining, chemical products and processes, building, and consumer goods. About 7,000 standards have already been issued, and new standards are being completed at a rate of about 700 each year. Extensive use of these standards is made

throughout her industrial structure.

For the first time since the war, USSR representatives participated in international meetings on technical problems at the recent standardization meetings at Paris.

The USSR representatives at the joint meetings of the UNSCC-ISA were Dimitri Golyaev, vice president of the All-Soviet Standards Committee and Professor A. Saverin, Moscow Technical High School. The representatives at the meeting of the International Electrotechnical Commission were Professor M. Chatelain, who has been active in IEC affairs for a great many years, and Mr Lavrinenko.

### Ireland to Organize Standards Institute

The Industrial Research Council of Ireland is to be replaced by an Institute for Industrial Research and Standards, the Dublin *Irish Independent* announces.

Among its varied functions, the new Institute will be expected to undertake and to encourage scientific research, to promote the use of natural resources, to deal with technical processes and practices, and to test commodities intended for sale.

Under the bill which officially establishes this new organization, it is specified that the Institute will consist of the Council of the Institute, the Industrial Research Committee, the Standards Committee, and the Director of Industrial Research and Standards. The members of these groups are subject to appointment by the Minister and funds are to be provided by the Government.

### British Bankers Agree on Standard Check

Agreement has been reached by members of the British Bankers' Association on standard sizes and layouts for bank checks. It is expected that this uniformity will result in greater accuracy in the rapid handling of checks by bank staffs.

The minimum size of the new checks will be 6 x 3 in., while the maximum size will be 8 x 4 in. The most noticeable change will be in the placing of the figures of the amount and the signature on the right hand side of the check. Present practice in Great Britain is almost universally consistent in placing the figures on the left and signature on the right.

# Standards Institution of Palestine Reports Work on 23 Specifications

Some 23 standard specifications are now being drafted by various subcommittees of the Standards Institution of Palestine, C. Wilson Brown, president of the Institution, declared in his First Annual Report.

Most of the subjects under consideration relate to the building industry, which is of particular importance to the country's economy at the present time, he stated. In addition, twelve other subcommittees are under formation, of which only three deal with building—four are assigned to the electrical industry; four to water installations; and one to engineering symbols in Hebrew. It is expected that at least 28 standard specifications should result from the work of these groups.

Because Palestine is a small country, the Standards Institution has found it most satisfactory to combine the function of preparing and adopting satisfactory standards with that of testing the products to see that they conform to appropriate specifications. Since the establishment of this joint operation, the volume of testing work has expanded considerably, the Institution reports. More than 3,000 tests have been performed,

covering over 8,000 tested samples. Approximately 62 percent of these tests were carried out by the Building Materials Laboratory, 24 percent by the Chemical, and 14 percent by the Engineering Laboratory.

The nature of Palestinian standardization work may be more clearly indicated by the list below, which notes the status of particular draft specifications now in progress.

*Drafts which have already been circulated for technical comment:*

Concrete Bricks  
Concrete Hollow Blocks

*To be circulated soon:*

Aggregates From Natural Sources for Concrete  
Clay Bricks for Low Heat Duty  
Firebricks (Grade 1200 and 1500 C)

*Those which have passed the first reading:*

Water Level Recorders  
Concrete Floor Tiles  
Plain Concrete Pipes  
Concrete Paving Flags

*Under consideration:*

Measurement of Building Works  
Compressed Gas Cylinders  
Portland Cement  
Citrus Concentrates  
Concrete Kerbstones  
Regulations Relating to Lifts

## British Study Rules for Road Signs

The standardization of road signs to be black on a white background and the removal of unauthorized traffic signs were among the recommendations made by the British Departmental Committee on Traffic Signs in a recent report. These suggestions have been passed on to highway officials in England, Scotland, and Wales for their consideration.

Other attempts at uniformity were made through suggestions to invert the triangle in "Slow" and "Halt" signs; to place warning signs on open roads not less than 150 yards in advance of the places to which they apply; and to provide depth gages at fords on public roads.

The report also made other recommendations, particularly disapprov-

ing illuminated advertising signs placed in positions where they may distract the attention of the driver from traffic signs or may be mistaken for them.

## Uniform Street Lighting Proposed for Britain

A uniform standard of street lighting is being sought by the British Minister of Transport, the *London Electrician* reports. The responsibility for administration of public lighting is, at present, carried on by local authorities and it is intended that this shall continue. Standardization, however, would place responsibility for the technical adequacy and efficiency of street lighting in the hands of illuminating engineers.

## Compressed Gas Makers ASA Associate Member

Newest of the Associate Members in the ASA is the Compressed Gas Manufacturers Association of New York which has been functioning since 1913.

As a representative of the technical interests of the gas industries, the CGMA has been primarily concerned with safety in the storage, transportation, handling, and uses of compressed gases. As a result, much of its contacts are with regulatory authorities—federal, state, and local—who have or assume jurisdiction over the products of these industries, since gases under pressure are potentially hazardous commodities.

While the Association is not engaged, to any great extent, in standardization work of its own, it is an active participant in several ASA sectional committees. It is represented on the Sectional Committee on the Scheme for the Identification of Piping Systems, A13; Safety Code for Mechanical Refrigeration, B9; Safety Code for Compressed Air Machinery and Equipment, B19; Code for Pressure Piping, B31; and Specifications for Pressure and Vacuum Gages, B40.

The president of the Compressed Gas Manufacturers Association this year is a Canadian, and Canada is also well represented on the Executive Board. The officers are:

Clarence McL. Pitts, President  
C. G. Andrew, First Vice President  
L. W. Hench, Second Vice President  
Franklin R. Fetherston, Secretary-Treasurer

## New Representatives on Standards Council

Changes in the membership of the ASA Standards Council have resulted in the addition of the following new representatives:

**Bureau of Aeronautics—**

*Captain N. A. Drais, USN*, has been designated as alternate to Rear Admiral L. C. Stevens.

**National Paint, Varnish and Lacquer Association—**

*E. W. Fasig*, The Lowe Brothers Company, will act as alternate to Albert B. Bingham.

# —New Standards in ASA Library—

For the information of ASA Members, the American Standards Association publishes a selected list of standards as they are received by the ASA Library. The list below includes only those standards received recently which the ASA believes are

of greatest interest to Members.

These standards may be consulted by Members at the ASA Library, or copies may be obtained from the organization issuing the standard. The address of the organization is included for convenience in ordering.

## Associations and Technical Societies

### American Society for Testing Materials (1916 Race Street, Philadelphia 3, Pa.)

As a service to Company Members, the ASA maintains a sale file of all ASTM standards. They can be purchased from the ASA Sales Department at 25 cents each except where otherwise noted.

#### ASTM Standards

Carbonizable Substances in Paraffin Wax, Method of Test for, D612-45  
Carbonizable Substances in White Mineral Oil (Liquid Petrolatum), Method of Test for, D565-45  
Chemical Analysis of Industrial Metal Cleaning Compositions, Methods of, D800-45  
Copper Water Tube, Specifications for, B88-45  
Copper-Base Alloy Forging Rods, Bars, and Shapes, Specifications for, B124-45  
Descriptive Nomenclature of Objects Made From Plastics, D675-45  
Distillation of Gasoline, Naphtha, Kerosine, and Similar Petroleum Products, Method of Test for, D86-45  
Electrodeposited Coatings of Nickel and Chromium on Copper and Copper-Base Alloys, Specifications for, B141-45  
Flash and Fire Points By Means of Open Cup, Method of Test for, D92-45  
Free-Cutting Brass Rod and Bar for Use in Screw Machines, Specifications for, B16-45  
Insulation Resistance of Electrical Insulating Materials, Methods of Test for, D257-45  
Liquid Toilet Soaps, Specifications for, D799-45  
Saponification Number of Petroleum Products By Color-Indicator Titration, Method of Test for, D94-45  
Surface Wettability of Paper (Angle-of-Contact Method), Method of Test for, D724-45  
Temperature-Resistance Constants of Alloy Wires for Precision Resistors, Method of Test for, B84-45  
Temperature-Resistance Constants of Sheet Materials for Shunts and Precision Resistors, Method of Test for, B114-45  
Testing Flexible Varnished Tubing Used for Electrical Insulation, Methods of, D350-45  
Testing Wool Felt, Methods of, D461-45  
Tetrasodium Pyrophosphate (Anhydrous), Specifications for, D595-45  
Welded Wrought-Iron Pipe, Specifications for, A72-45

Absorption By Bibulous Papers of Water and Writing Ink, Method of Test for, D824-45T  
Acid Wash Color of Benzene, Toluene, Xylenes, and Similar Industrial Aromatic Hydrocarbons, Method of Test for, D848-45T  
Air Content of Portland-Cement Mortar, Method of Test for, C185-46T  
Air-Entrainment Portland Cement, Specifications for, C175-46T  
Alloy-Steel Bolting Materials for High-Temperature Service, Specifications for, A193-45T  
Ammonia in Phenol-Formaldehyde Molded Materials, Method of Test for, D834-45T  
Cellular Rubber Products, Specifications for, D798-46T  
Cellulose Acetate Plastic Sheets, Specifications for, D786-45T  
Changes in Properties of Rubber and Rubber-Like Materials in Liquids, Methods of Test for, D471-46T  
Chemical Analysis of Soaps Containing Synthetic Detergents, Methods of, D820-45T  
Chromate Finishes on Electrodeposited Zinc, Hot-Dipped Galvanized, and Zinc Die-Cast Surfaces, Specifications for, B201-45T  
Chromium-Nickel-Iron Alloy Castings (25-12 Class) for High-Temperature Service, Specifications for, B190-45T  
Chromium Plating on Steel for Engineering Use, Recommended Practice for, B177-45T  
Coefficient of Cubical Thermal Expansion of Plastics, Method of Test for, D864-45T  
Color of Lubricating Oil and Petrolatum By Means of ASTM Union Colorimeter, Method of Test for, D155-45T  
Colorfastness of Plastics to Light, Method of Test for, D620-45T  
Compression Test for Shipping Containers, Method of, D642-45T  
Conditioning Plastics and Electrical Insulating Materials for Testing, Method for, D618-45T  
Copper Corrosion of Industrial Aromatic Hydrocarbons, Method of Test for, D849-45T  
Deformation of Plastics Under Load, Methods of Test for, D621-45T  
Density of Fine Wire and Ribbon for Electronic Devices, Method of Test for, B180-45T  
Designating the Flow Temperature of Thermo-Plastic Molding Materials, Method of, D863-45T

Diameter by Weighing of Fine Wire Used in Electronic Devices and Lamps, Method of Test for, B205-45T  
Distillation of Industrial Aromatic Hydrocarbons, Method of Test for, D850-45T  
Drop Test for Shipping Containers, Method of, D775-45T  
Electrodeposited Coatings of Lead on Steel, Specifications for, B200-45T  
Electrodeposited Coatings of Nickel and Chromium on Steel, Specifications for, A166-45T  
Electrodeposited Coatings of Nickel and Chromium on Zinc and Zinc-Base Alloys, Specifications for, B142-45T  
Evaluating Treated Textiles for Permanence of Resistance to Microorganisms, Methods of Test for, D862-45T  
Fastness of Colored Textiles to Light, Method of Test for, D506-45T  
Flexible Treated Cotton and Rayon Sleeving Used in Electrical Insulation, Specifications for, D372-45T  
Flexural Test of Plastics, Method of, D790-45T  
Foundry Pig Iron, Specifications for, A43-45T  
Gas Content of Insulating Oils, Methods of Test for, D831-45T  
GR-S Synthetic Rubber Sheath Compound for Electrical Insulated Cords and Cables, Specifications for, D866-46T  
Haze of Transparent Plastics by Photoelectric Cell, Method of Test for, D672-45T  
Heat Aging of Vulcanized Natural or Synthetic Rubber by Test Tube Method, Method of, D865-46T  
Heat Distortion Temperature of Plastics, Method of Test for, D648-45T  
High-Strength Steel Castings for Structural Purposes, Specifications for, A282-45T  
Industrial Radiographic Terminology for Use in Radiographic Inspection of Castings and Weldments, E52-45T  
Insulated Wire and Cable: Heat-Resisting Synthetic Rubber Compound, Specifications for, D754-46T  
Insulated Wire and Cable: Performance Synthetic Rubber Compound, Specifications for, D755-46T  
Life Test of Electrical Contact Materials, Method for, B182-46T  
Magnesium-Base Alloy Bars, Rods, and Shapes, Specifications for, B107-45T  
Magnesium-Base Alloy Forgings, Specifications for, B91-45T  
Magnesium-Base Alloy Sand Castings, Specifications for, B80-45T  
Magnesium-Base Alloy Sheet, Specifications for, B90-45T  
Magnesium-Base Alloys in Ingot Form for Sand Castings, Die Castings, and Permanent Mold Castings, Specifications for, B93-45T

#### ASTM Tentatives—Continued

Diameter by Weighing of Fine Wire Used in Electronic Devices and Lamps, Method of Test for, B205-45T  
Distillation of Industrial Aromatic Hydrocarbons, Method of Test for, D850-45T  
Drop Test for Shipping Containers, Method of, D775-45T  
Electrodeposited Coatings of Lead on Steel, Specifications for, B200-45T  
Electrodeposited Coatings of Nickel and Chromium on Steel, Specifications for, A166-45T  
Electrodeposited Coatings of Nickel and Chromium on Zinc and Zinc-Base Alloys, Specifications for, B142-45T  
Evaluating Treated Textiles for Permanence of Resistance to Microorganisms, Methods of Test for, D862-45T  
Fastness of Colored Textiles to Light, Method of Test for, D506-45T  
Flexible Treated Cotton and Rayon Sleeving Used in Electrical Insulation, Specifications for, D372-45T  
Flexural Test of Plastics, Method of, D790-45T  
Foundry Pig Iron, Specifications for, A43-45T  
Gas Content of Insulating Oils, Methods of Test for, D831-45T  
GR-S Synthetic Rubber Sheath Compound for Electrical Insulated Cords and Cables, Specifications for, D866-46T  
Haze of Transparent Plastics by Photoelectric Cell, Method of Test for, D672-45T  
Heat Aging of Vulcanized Natural or Synthetic Rubber by Test Tube Method, Method of, D865-46T  
Heat Distortion Temperature of Plastics, Method of Test for, D648-45T  
High-Strength Steel Castings for Structural Purposes, Specifications for, A282-45T  
Industrial Radiographic Terminology for Use in Radiographic Inspection of Castings and Weldments, E52-45T  
Insulated Wire and Cable: Heat-Resisting Synthetic Rubber Compound, Specifications for, D754-46T  
Insulated Wire and Cable: Performance Synthetic Rubber Compound, Specifications for, D755-46T  
Life Test of Electrical Contact Materials, Method for, B182-46T  
Magnesium-Base Alloy Bars, Rods, and Shapes, Specifications for, B107-45T  
Magnesium-Base Alloy Forgings, Specifications for, B91-45T  
Magnesium-Base Alloy Sand Castings, Specifications for, B80-45T  
Magnesium-Base Alloy Sheet, Specifications for, B90-45T  
Magnesium-Base Alloys in Ingot Form for Sand Castings, Die Castings, and Permanent Mold Castings, Specifications for, B93-45T

#### ASTM Tentatives—Continued

Metal Powder Sintered Bearings (Oil Impregnated), Specifications for, B202-45T  
Mild to Medium-Strength Carbon-Steel Castings for General Application, Specifications for, A281-45T  
Moldings Specimens of Phenolic Materials, Recommended Practice for, D796-45T  
Molds for Test Specimens of Molding Materials Used for Electrical Insulation, Specifications for, D647-45T  
Natural Block Mica and Mica Films Suitable for Use in Fixed Mica-Dielectric Capacitors, Specifications for, D748-45T  
Nickel-Chromium-Iron Alloy Castings (35-15 Class) for High-Temperature Service, Specifications for, B207-46T  
Power Factor and Dielectric Constant of Electrical Insulating Materials, Methods of Test for, D150-45T  
Resistance of Textile Fabrics and Yarns to Insect Pests, Methods of Test for, D582-45T  
Resistance of Textile Materials to Micro-organisms, Methods of Test for, D684-45T  
Rope, Methods of Testing and Tolerances for, D738-45T  
Round Nickel Wire for Lamps and Electronic Devices, Specifications for, B175-45T  
Sampling and Testing Untreated Paper Used in Electrical Insulation, Methods of, D202-45T  
Solidifying Point of Benzene, Method of Test for, D852-45T  
Spun, Twisted, or Braided Products Made From Flax, Hemp, Ramie, or Mixtures Thereof, Methods of Testing and Tolerances for, D739-45T  
Strength of Welded Joints of Lead Wires for Electronic Devices and Lamps, Method of Test for, B203-45T  
Surface Flaws in Tungsten Seal Rod and Wire, Method of Test for, B204-45T  
Temper of Strip and Sheet Metals for Electronic Devices, Method of Test for, B155-45T  
Terms Relating to Soaps and Other Detergents, Definitions of, D459-44T  
Testing Cellular Rubber Products, Methods of, D552-46T  
Testing Molded Materials Used for Electrical Insulation, Methods of, D48-45T  
Testing Wire for Supports Used in Electronic Devices and Lamps, Methods of, B157-45T  
Thermometers (ASTM), Specifications for, E1-45T  
Water Vapor Permeability of Paper and Other Sheet Materials at Elevated Temperature and Humidity, Method of Test for, D830-45T

## Lighting Handbook Postponed

Issuance of the *IES Lighting Handbook* has been postponed until October, 1947, the Illuminating Engineering Society announces. Originally scheduled to be published in October of this year, the *Handbook* has been delayed because of the numerous problems of reconversion to peacetime production which have occupied the members who are assisting in the preparation of the text.

## U. S. Government

(Wherever a price is indicated, the publication may be secured from the Superintendent of Documents, Government Printing Office, Washington, D. C. In other cases, copies may be obtained from the government agency concerned.)

### National Bureau of Standards (Washington 25, D. C.)

#### Simplified Practice Recommendations

Steel; Bars and Bar-Size Shapes, Carbon, Hot-Rolled, R222-46, 10¢  
Valves, Regulating, Automatic, R219-46, 5¢  
Blades, Hack-Saw, R90-46, 10¢

### Standards Branch (Room 6046, Procurement Division Building, 7th & D Streets, SW, Washington 25, D.C.)

Federal Specifications are prepared for use by all government departments and establishments in their purchases. Copies are available from the Superintendent of Documents, Government Printing Office, Washington 25, D. C., at 5 cents each. Requests should be accompanied by cash, check, or money order.

As a service to Company Members, the ASA maintains a sale file of all Federal Specifications. These specifications can be purchased from the ASA Sales Department.

#### Federal Specifications

Belting; Round, Leather (Superseding Fed Spec KK-B-211a), KK-B-211b, June 1946

Boxes and Outlet-Fittings, Floor; (for Rigid-Steel-Conduit and Electric-Metallic-Tubing (Steel), (Amendment 2), W-B-616, July 1946

Carbon-Black; Dry (Paint - Pigment), (Amendment 1), TT-C-120, June 1946

Cards; Guide (Card-Size), (Amendment 1), UU-C-76a, July 1946

Cement, Insulation; Thermal, Mineral-Wool (Superseding Part of Fed Spec HH-P-386a), HH-C-168, July 1946

Cement; Rubber (Artists' and Photographers' and Cold-Patching) (Superseding Amendment 1), (Amendment 2), ZZ-C-191a, June 1946

Cements; Portland, SS-C-192, July 1946

Clips, Suture; Metal, GG-C-439, August 1946

Cloth; Wire, Screen (Superseding Amendment 4), (Amendment 5), RR-C-451a, June 1946

Coats and Trousers; Rubber-Coated (Foul-Weather-Clothing) (Superseding Emer Alt Fed Spec E-BBB-C-606), (Amendment 1), BBB-C-606, June 1946

Compounds, Joining; Sulfur (for Bell-and-Spigot Cast-Iron Pipe), SS-C-608, August 1946

Conduit and Fittings; Fiber, Bituminized, (Amendment 2), W-C-581, July 1946

Couplings; Hose, Cotton (Rubber-Lined) and Linen (Unlined) (Superseding Emer Alt Fed Spec E-WW-C-621a), (Amendment 1), WW-C-621a, June 1946

Desks; Steel (Superseding Amendment 1 and Emer Alt Fed Spec E-AA-D-191), (Amendment 2), AA-D-191, May 1946

Drums; Steel, Type 5B (for Liquid Petroleum Products), (Amendment 1), RR-D-729a, July 1946

Enamel; Gloss, Synthetic (for Metal and Wood Hospital Furniture), TT-E-491, July 1946

Enamel; Interior, Semigloss, Tints and White, TT-E-508, July 1946

Folders; File (Calendered), Vertical, (Amendment 1), UU-F-571c, July 1946

Gloves, Rubber; Surgeons' (Superseding Amendment 2), (Amendment 3), ZZ-G-421a, May 1946

Hammers, Mauls, and Sledges (Superseding Amendment 2), (Amendment 3), GGG-H-86, June 1946

Hose; Steam (Superseding Amendment 3), (Amendment 4), ZZ-H-541, June 1946

Hose; Water, Wrapped (Superseding Amendment 3 and Emer Alt Fed Spec E-ZZ-H-611), (Amendment 4), ZZ-H-611, June 1946

Insulation; Mineral-Wool, Block and Board (for Heated Surfaces), HH-I-564, August 1946

Lamps; Electric, Incandescent, Large, Tungsten-Filament (1947 Supplement), W-L-101e, September 1946

Lamps; Electric, Incandescent, Miniature, Tungsten-Filament (1947 Supplement), W-L-111b, September 1946

Linoleum; Battleship (Superseding Amendment 1 and Emer Alt Fed Spec E-LLL-L-351a), (Amendment 2), LLL-L-351a, May 1946

Linoleum; Inlaid and Molded (Superseding Amendment 1 and Emer Alt Fed Spec E-LLL-L-359), (Amendment 2), LLL-L-359, May 1946

Linoleum; Plain, Jasp, and Marbleized (Superseding Amendment 1 and Emer Alt Fed Spec E-LLL-L-367), (Amendment 2), LLL-L-367, May 1946

Lubricants and Liquid-Fuels; General Specifications (Methods for Sampling and Testing) (Superseding Fed Spec VV-L-791b), VV-L-791c, May 1946

Paper, Kraft; Concrete-Curing, Water-proofed (Superseding Amendment 1), (Amendment 2), UU-P-264, May 1946

Paper; Stencil, Board (Superseding Fed Spec UU-P-543a), UU-P-543b, June 1946

Pipe-Fittings (Bushings, Plugs, and Lock-Nuts); Bronze and Ferrous (Screwed), (Amendment 1), WW-P-471, June 1946

Primer, Paint; Synthetic (for Ferrous Metal and Wood Surfaces), TT-P-636, July 1946

Scales, Weighing; Beam, Bench-or-Counter-Types, AAA-S-115, June 1946

Scales, Weighing; Beam, Portable-Platform, Floor-Types, AAA-S-118, June 1946

Scales, Weighing; Suspended-Types, AAA-S-133, June 1946

Sleeves; Dredging (Superseding Fed Spec ZZ-S-451 and Emer Alt Fed Spec E-ZZ-S-451), ZZ-S-451a, June 1946

Soap; Laundry, Ordinary Bar (Reinstating a Part of Amendment 2, Cancelled by Circular Letter November 13, 1945), (Amendment 3), P-S-591a, May 1946

Steel, Structural- (Including Welding) and Rivet; (for) Bridges and Buildings (Superseding Amendment 2), (Amendment 3), QQ-S-741, June 1946

Valves, Bronze Gate; 125- and 150-Pound, Screwed and Flanged (for Land Use), (Amendment 1), WW-V-54, June 1946

Wire, Steel (Carbon); Spring, Music, (Amendment 1), QQ-W-470, June 1946

Zinc-Dust (Metallic-Zinc-Powder); Dry (Paint Pigment), TT-Z-291, July 1946

# ASA Standards Activities

## American Standards

### American Standards Approved

Allowable Concentration of Trichloroethylene, Z37.19-1946  
*Endorsing Sponsor:* American Industrial Hygiene Association

Construction and Maintenance of Ladders and Stairs for Mines, M12.1-1946 (Revision of American Tentative Standard M12-1928)

*Sponsor:* American Mining Congress

#### Still Photography:

Dimensions for 35-Millimeter Film Magazines for Still Picture Cameras, Z38.1.47-1946

Reels for Processed Microfilm, Z38.7.17-1946

Specifications for Microfilm Readers, Z38.7.9-1946

Specifications for 35-Millimeter Slidefilm Projection Rolls, Z38.3.3-1946

*Sponsor:* Optical Society of America

### Standards Being Considered by ASA for Approval

#### Bedding and Upholstery:

Definitions (Including Tolerances) for Cotton Filling Materials for Bedding and Upholstery, L12.1

Definitions (Including Tolerances) for Wool Filling Materials for Bedding and Upholstery, L12.2

Definitions for Miscellaneous Filling Materials for Bedding and Upholstery, L12.4

*Sponsor:* National Association of Bedding and Upholstery Law Enforcement Officials

Involute Splines, B5.15 (Revision of B5.15-1939)

*Sponsors:* American Society of Mechanical Engineers; National Machine Tool Builders' Association; Society of Automotive Engineers, Inc

Letter Symbols for Chemical Engineering, Z10.12

*Sponsors:* American Association for the Advancement of Science; American Institute of Electrical Engineers; American Society of Civil Engineers; American Society of Mechanical Engineers; Society for the Promotion of Engineering Education

#### Motion Picture Photography:

Theater Projection Rooms (Revision of American Recommended Practice Z22.28-1941, to be designated as Proposed American Standard Dimensions for Motion Picture Theater Projection Rooms, Z22.28)

Theater Projection Screens (Revision of American Recommended Practice Z22.29-1941, to be designated as Proposed American Standard Dimensions for Motion Picture Theater Projection Screens, Z22.29)

Safety Film (Revision of American Recommended Practice Z22.31-1941, to be designated as Proposed American Standard Definition for Motion Picture Safety Film, Z22.31)

*Sponsor:* Society of Motion Picture Engineers

### Standards Submitted to ASA for Approval

Specifications for Portland Cement Stucco and Portland Cement Plastering, A42

*Sponsors:* American Institute of Architects; American Society for Testing Materials

Addenda to American Standard Approval Requirements for Hotel and Restaurant Ranges and Unit Broilers, Z21.3-1940

Addenda to American Standard Approval Requirements for Hotel and Restaurant Deep Fat Fryers, Z21.27-1940

*Sponsor:* American Gas Association

Sizes of Clay and Concrete Modular Masonry Units, A62.3

*Sponsors:* American Institute of Architects; Producers' Council

### New Projects Initiated

Safety Code for Manlifts, A90

Protective Occupational Clothing (peacetime project), L18

Safety Color Code (peacetime project), Z53

Safety Code for the Industrial Use of X-Rays (peacetime project), Z54

### New Projects Being Considered

Identification and Cataloging of Antifriction Bearings

Linemen's Rubber Protective Equipment (peacetime project)

Women's Industrial Clothing (peacetime project)

### Withdrawal of Approval Being Considered

Rating of Rivers, A36

## American War Standards

### American War Standard Approved

Radio Noise, Methods of Measuring, C63

Method of Measuring Radio Interference of Electrical Components and Completed Assemblies of Electrical Equipment for the Armed Forces from 150 Kilocycles to 20 Megacycles, C63.1-1946

### Standards Under Way

Screw Threads, B1

Buttress Threads

High-Duty Studs in Light Alloys

Instrument Threads

Stub Acme Threads

Unification of Screw Threads

Women's Industrial Clothing, L17

Jackets for Outdoor Wear (Slide Fastener Closure), L17.6

Jackets for Outdoor Wear (Fly-Type Button Closure), L17.5

## News About ASA Projects

### Portland Cement Stucco and Portland Cement Plastering, A42

*Sponsors:* American Institute of Architects; American Society for Testing Materials

Proposed American Standard Specifications for Portland Cement Stucco and Proposed American Standard Specifications for Portland Cement Plastering have been accepted by both sponsors and submitted to the ASA for approval as American Standards.

In 1938 the Portland Cement Association, sponsor, withdrew a proposed standard combining both portland cement stucco and portland cement plaster because of failure to secure agreement within the committee. Revised separate drafts were resubmitted in June 1945 and a final ballot was taken December 5, 1945.

Sectional committee A42 is considering other standards for stucco and plastering which will differ from the cement standards in the proportions of cement and lime. Another type of stucco under consideration will use masonry cement instead of portland cement.

### Administrative Requirements for Building Codes, A55

*Sponsors:* American Municipal Association; Building Officials Conference of America, Inc

The sectional committee has approved a proposed revision of American Standard Administrative Requirements for Building Codes, A55.1.

### Coordination of Dimensions of Building Materials and Equipment, A62

*Sponsors:* American Institute of Architects; The Producers' Council, Inc

The joint sponsors of ASA project A62 have submitted the proposed American Standard Sizes of Clay and Concrete Modular Masonry Units, A62.3, to the American Standards Association with a recommendation for approval as an American Standard. This case is being referred to the Board of Examination for recommendations to the Standards Council.

### Small Tools and Machine Tool Elements, B5

*Sponsors:* American Society of Mechanical Engineers; National Machine Tool Builders' Association; Society of Automotive Engineers

The Metal Cutting Tool Institute has been named as a joint sponsor for the ASA project on Small Tools and Machine Tool Elements. This decision was taken by the

Mechanical Standards Committee as a result of a request from the Institute stating that it is "vitally interested in ASA Standards affecting cutting tools produced by the membership."

Three American Standards in the series on small tools and machine tool elements are being revised, the sponsors reported. These are: Milling Cutters, B5c-1930; Taps, Cut and Ground Threads, B5.4-1939; and Twist Drills, Straight Shank, B5.12-1940.

### Backlash for General Purpose Spur Gearing, B6.3-1940—

### Gear Materials and Blanks, B6.2-1933—

**Sponsors:** American Society of Mechanical Engineers; American Gear Manufacturers Association

The Mechanical Standards Committee has voted to recommend to the Standards Council that these two standards be withdrawn. The sponsors have reported that the American Standard for Gear Materials and Blanks, B6.2-1933, is now obsolete and that the American Standard for Backlash for General Purpose Spur Gearing, B6.3-1940, has been superseded by the American Standard, Inspection and Tolerances for Gears, B6.6-1946.

### Pipe Plugs of Cast Iron, Malleable Iron, Cast Steel or Forged Steel, B16e2-1936—

**Sponsors:** American Society of Mechanical Engineers; Heating, Piping, and Air Conditioning Contractors National Association; Manufacturers Standardization Society of the Valve and Fittings Industry

At its meeting July 17, the Mechanical Standards Committee voted to recommend to the Standards Council that American Standard B16e2-1936 be withdrawn, as it has been superseded by American Standard, Ferrous Plugs, Bushings, Locknuts and Caps with Pipe Threads, B16.14-1943.

### Reaffirmation of Inch-Millimeter Conversion for Industrial Use, B48.1-1933—

The Mechanical Standards Committee of the American Standards Association decided at its meeting of July 17 that the American Standard, Inch-Millimeter Conversion for Industrial Use, B48.1-1933, should be reaffirmed by the American Standards Association as of January 1, 1947, unless adverse comments to such reaffirmation are received from any responsible group before that date. In this case, such comments will be given due consideration before a decision on reaffirmation is taken. This procedure is in accordance with the ASA Bylaws which require that once in every three years an American Standard shall be reviewed by the correlating committee under whose jurisdiction it belongs, with a view to reaffirmation or revision. The American Standard on Inch-Millimeter Conversion was established by the general acceptance method. Its approval by the ASA was based on a wide canvass of organizations interested, in which no adverse comments were received. The essence of the standard is that the conversion ratio 25.4 between the inch and the millimeter is

recommended for industrial use. The British Standards Institution has approved a similar standard so that now the ratio 25.4 has practically become a world standard. No sign of disagreement with this recommendation has been received during the period the American Standard has been in existence.

### Insulated Wires and Cables, C8—

**Sponsor:** Electrical Standards Committee

At a recent meeting of Sectional Committee C8, the organization of the committee was revised. The personnel of the various technical committees were reviewed and additional nominations were made; organizations to be added to the sectional committee were discussed.

The committee is recommending to the Electrical Standards Committee that a new sectional committee be organized in the C group of ASA projects in the field of Electrical Engineering to take over the work on conductor and stranding of the Sectional Committee on Specifications for Copper Wire, H4, with a proposed scope to include specifications for metallic conductors made of wire, whether for use in uninsulated form or for subsequent use in making insulated or covered wire and cable.

In accordance with the decision arrived at in a previous meeting to produce complete specifications rather than component specifications, the scopes of the various technical committees on insulations were enlarged to cover complete product specifications. The new technical committee titles are: No. 1, General Standards and Definitions; No. 4, Rubber and Rubber-Like Insulated Wire and Cable; No. 5, Impregnated Paper Insulated Wire and Cable; No. 6, Varnished Cloth Insulated Wire and Cable; No. 12, Weatherproof Wire and Cable; and No. 13, Heat Resisting Wire and Cable Other Than Those with Rubber and Rubber-Like Insulation.

Technical Committees No. 8, Fibrous Coverings, and No. 9, Metallic Coverings, were discontinued and their responsibilities will be referred to the appropriate technical committees. Technical Committee No. 7, Magnet Wire, was also discontinued and the Committee recommended that consideration be given to the establishment of a sectional committee on magnet wire, since Committee C8, as it is now constituted, cannot effectively handle the specifications for magnet wire.

In order to handle the subject of protective coverings, joint working groups from the various technical committees concerned will be organized as required.

### Radio, C16—

**Sponsor:** Institute of Radio Engineers

The Institute of Radio Engineers has requested the American Standards Association to study the broad question of standardization of electronic subjects. The IRE has suggested as a basis for such discussions that possibly a Communications and Electronics Standards Committee along the lines of the Electrical Standards Committee might be set up. Such a committee would deal with existing or new ASA projects covering radio, communications, and electronics. It is realized that such a committee would have to be closely correlated with the work of the Electrical Standards Committee and the whole matter will receive careful study. The ESC has been

requested by the vice chairman of the Standards Council to draft proposals covering the method of handling electronic standardization work for consideration at a conference of those concerned with electronics and the Electrical Standards Committee to be called by the chairman of the Standards Council.

### Electrical Measuring Instruments, C39—

**Sponsor:** Electrical Standards Committee

In accordance with the decision made at a meeting on May 28, 1946, a letter ballot of the Sectional Committee on Electrical Measuring Instruments is being taken on the question of withdrawing approval of four American War Standards for electrical indicating instruments. The war standards being considered for abandonment are:

Electrical Indicating Instruments (2½- and 3½- Inch, Round, Flush-Mounting, Panel-Type), C39.2-1944; Shock-Testing Mechanism for Electrical Indicating Instruments (2½- and 3½- Inch, Round, Flush-Mounting, Panel-Type), C39.3-1943; Dimensions for External Radio-Frequency Thermo-couple Converters (120 Milliamperes to 10 Amperes, Inclusive), C39.4-1943; and External Ammeter Shunts for Panel-Type Instruments, C39.5-1943.

### Domestic Electric Flatirons, C70—

**Sponsors:** National Electrical Manufacturers Association

The National Electrical Manufacturers Association has recommended to the ASA that the Sectional Committee on Domestic Flatirons, C70, be granted an increased scope to cover all household appliances and it has offered to accept sponsorship of the project. This action is in line with a recent recommendation from the ACUCG that the need for standards for portable electric space heaters and portable electric hot plates be referred to the Electrical Standards Committee and that the Sectional Committee on Domestic Electric Flatirons should be requested to develop such a standard. NEMA concurred in this opinion and has already prepared two standards—Hot Plates and Disc Stoves, NEMA Pub No. 46-113, and Portable Radiant Heaters, NEMA Pub No. 46-114—which have been submitted as the bases for the development of the ASA standard.

### Standards for Electric Lamps, C78—

**Sponsor:** Electrical Standards Committee

A meeting of a subgroup of Subcommittee 2 on Electric Discharge Lamps of the Sectional Committee on Electric Lamps met on August 9 in New York. Fluorescent lamps and socket dimensions were discussed in detail and many basic dimensions were arrived at to be proposed as American Standard.

### Wood Poles, O5—

**Sponsor:** Telephone Group

The ASA War Standards Project on Wood Poles has been terminated upon recommendation of the chairman of the Electrical Standards Committee and agreement by the Office of Price Administration, which had originally requested the work.

#### News About ASA Projects—Continued

Since its formation, American War Standard Specifications and Dimensions for Wood Poles—Miscellaneous Conifers, OS-7-1945, has been approved and is in wide use.

#### Prevention of Dust Explosions, Safety Code for the, Z12—

**Sponsors:** National Fire Protection Association; U. S. Department of Agriculture

Since the research work of the Department of Agriculture on dust explosion and farm fire prevention was terminated several years ago, the Department does not feel that it has been materially able to contribute to the success of this work. Therefore, it has requested that its share of the joint sponsorship of this project be terminated. The request is being forwarded to the Safety Code Correlating Committee.

#### Principles Underlying Valid Certification and Labeling of Commodities, Z34—

The draft of the Proposed American Standard Practice for Certification Procedures, Z34.1, was revised at a meeting on July 19 and will now be submitted to letter ballot of ASA Sectional Committee Z34.

#### Photography, Z38—

**Sponsor:** Optical Society of America

Letter ballots on the proposed revisions of the following American Standards have been sent out to members of the sectional committee:

Dimensions for Industrial X-Ray Sheet Film (Sheet Sizes), Z38.1.25-1944; Dimensions for Graphic Arts Sheet Film (Inch Sizes), Z38.1.26-1944; Dimensions for Medical X-Ray Sheet Film (Inch and Centimeter Sizes), Z38.1.27-1944; and Dimensions for Professional Portrait and Commercial Sheet Film (Inch Sizes), Z38.1.28-1944.

Proposed American Standard Dimensions of Moulded Type Cores for Photographic Film and Paper Rolls, Z38.1.48, is also out on letter ballot.

#### Advisory Committee on Ultimate Consumer Goods—

At a meeting on July 16, the ACUCG, acting upon a recommendation from its Executive Committee, authorized the appointment of a committee to work on the formation of a monthly news bulletin designed to educate manufacturers and retailers to work done by the ASA in the consumer field. In addition, methods were discussed for expediting plans of the ACUCG and a committee was appointed to investigate the possibility of holding a two-day meeting in the near future.

#### Mechanical Standards Committee, Executive Committee—

Alfred Iddles, representing The American Society of Mechanical Engineers, was re-elected chairman of the Mechanical Standards Committee; and F. H. Morehead, Manufacturers Standardization Soci-

ety of the Valve and Fittings Industry, was re-elected vice chairman at the July 17 meeting of the MSC. The other members of the Executive Committee, which was elected for the balance of the calendar year 1946, are:

H. C. Beal, ASA Telephone Group  
F. K. Glynn, Society of Automotive Engineers

F. O. Hoagland, National Machine Tool Builders' Association  
Charles M. Parker, American Iron and Steel Institute

Frank T. Ward, American Transit Association

The MSC also decided to enlarge the membership of its Executive Committee to eight members and to reserve the eighth place for a representative of the Armed Services. An invitation to fill this new place will be extended to the Army-Navy Joint Specifications Board.

#### Nomenclature for Glass Bulbs and Glass Molded Flares—

A request that the ASA undertake a project on standardization of glass bulbs and molded glass flares and also accept the responsibility for administration of a national system of nomenclature has been made by the Joint Electron Tube Engineering Council of the National Electrical Manufacturers Association and the Radio Manufacturers Association. The JETEC Committee on Mechanical Standardization is preparing proposals for standard nomenclature which might be considered by an ASA committee as a basis for American Standard.

#### Office Equipment Standardization—

A general conference to make recommendations as to whether the American Standards Association should organize a project on standardization of office equipment was held on August 21 at the Waldorf-Astoria, New York.

#### Numbering System for Anti-Friction Bearings—

At its July 17 meeting the Mechanical Standards Committee considered the initiation of a project to set up a numbering system for anti-friction bearings as recommended by a general ASA conference held June 12 in New York. This conference had been called following a request made by the Secretary of the Navy to the ASA that a numbering system developed by the Navy, and also adopted by the Army, be submitted to industry for general introduction into practice. The general conference on June 12 had also recommended that the new project be handled by a sectional committee under the joint sponsorship of the American Society of Mechanical Engineers and the Society of Automotive Engineers. Following the general conference the Navy had suggested that the project be handled by an autonomous sectional committee.

After discussion of the several proposals, the Mechanical Standards Committee decided to recommend to the Standards Council that the new project be initiated and that it be handled by a sectional committee under the sponsorship of the Mechanical Standards Committee.

## New Pigment Standards Available Through NBS

Two new dry paint pigments have been added to the set of standard samples of color and tinting strength issued by the National Bureau of Standards, making 26 that are now available. The new ones are: NBS No. 324, Ultramarine Blue, Federal Specification TT-U-450; and NBS No. 325, Iron Blue, Federal Specification TT-I-677. The price is \$2.00 per sample and money orders should be made payable to the National Bureau of Standards. Copies of the Federal Specifications that correspond with the standards are obtainable from the Superintendent of Documents, Government Printing Office, Washington 25, D. C., at 5 cents each.

#### Wisconsin Expands Work On Cheese Standards

A committee to prepare and recommend standards for all types of cheese not already covered by State standards has been appointed by the Wisconsin State Department of Agriculture, the *Journal of Commerce* announces.

Members of the committee have been authorized and instructed to confer with men who are technically trained and who have had practical experience in the manufacture and marketing of these various types of cheese.

#### Bureau of Standards Again Tests Batteries

At the request of several government agencies and manufacturers, the National Bureau of Standards, sponsor for the ASA project on Dry Cells and Batteries, C18, has resumed the qualification testing of dry batteries which had been suspended during the war.

This service was first undertaken by the Bureau twenty years ago. Samples are selected periodically at the manufacturers' plants and the batteries are subjected to a complete program of tests in accordance with the Federal Specifications. The results are supplied to various government departments and each manufacturer is informed of his own product. In reconvert ing the equipment, the control apparatus is being modernized.

# American Standards Just Published

American Standards Association

• ASA •

70 East 45th Street, New York 17, N. Y.

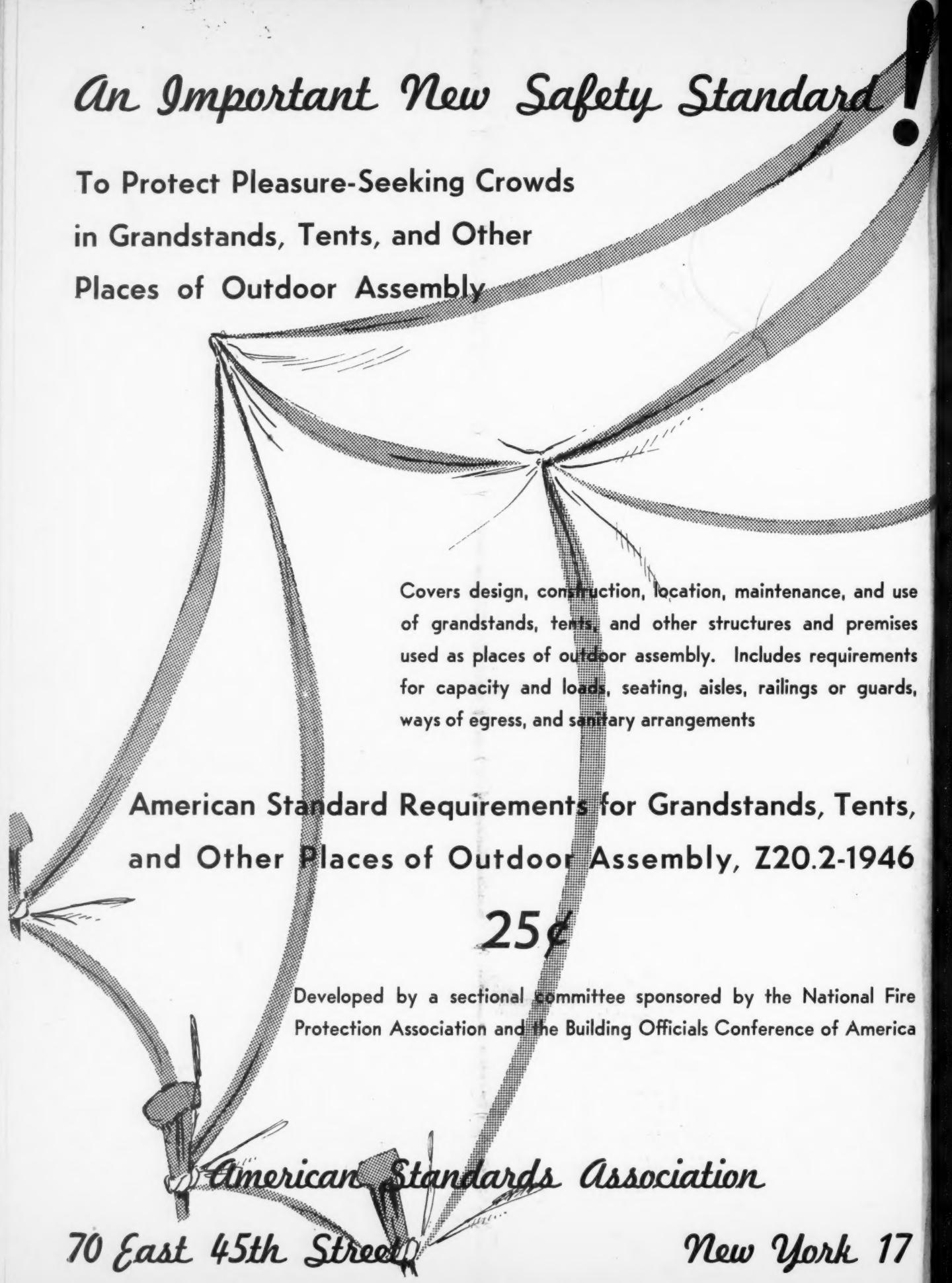
No. of Copies	ASA Number	Title and Description of Standard	Price
.....	A53.1-1946	<b>Building Code Requirements for Light and Ventilation.</b> Requirements for natural light and ventilation of buildings have now been incorporated into an American Standard Building Code. This standard covers ventilation and lighting of rooms according to use or occupancy; minimum window areas and percentage that must be capable of being opened; and minimum requirements for the area of yards. The standard does not cover artificial light or mechanical ventilation, although the conditions under which they may be permitted are indicated. (Sponsors: National Housing Agency; U. S. Public Health Service.)	.45
.....	B5.19-1946	<b>Life Tests of Single-Point Tools Made of Materials Other Than Sintered Carbides.</b> Life tests of single-point tools have now been standardized, adding another American Standard to the group formulated for small tools and machine tool elements. It covers test methods for the appraisal of single-point cutting tools other than those of sintered carbide for use on such machine tools as lathes, turret lathes, boring mills, planers, and shapers. (Sponsors: American Society of Mechanical Engineers; Society of Automotive Engineers; National Machine Tool Builders' Association.)	.45
.....	H7.1-1945	<b>Copper-Base Alloy Forging Rods, Bars, and Shapes, Specifications for (ASTM B124-45).</b> Copper-base alloy rods, bars, and shapes capable of being forged hot are given in this standard. Twelve alloys, the chemical composition and sampling for analysis, tolerances, basis of purchase, and manufacturing requirements are specified. (Sponsor: American Society for Testing Materials.)	.25
.....	H8.1-1945	<b>Free-Cutting Brass Rod and Bar for Use in Screw Machines, Specifications for (ASTM B1645).</b> These revised specifications cover free-cutting brass rods and bars of any specified cross-section suitable for high-speed screw machine work. The chemical compositions and analysis, tensile and bending properties, tolerances, and testing requirements are given. (Sponsor: American Society for Testing Materials.)	.25
.....	H23.1-1945	<b>Copper Water Tube, Specifications for (ASTM B88-45).</b> Revised specifications for seamless copper tubes especially designed for plumbing purposes, underground water services, etc, but also suitable for copper coil water heaters, fuel oil lines, and gas lines have been approved as American Standard. (Sponsor: American Society for Testing Materials.)	.25
.....	Z11.10-1945	<b>Distillation of Gasoline, Naphtha, Kerosine, and Similar Petroleum Products, Method of Test for (ASTM D86-45; API 507-45).</b> The method of test specified in this revised standard is intended for use in the distillation of gasoline, naphtha, kerosine, and similar petroleum products. The apparatus to be used and how this apparatus is to be prepared is outlined in detail. (Sponsors: American Society for Testing Materials; American Petroleum Institute.)	.25
.....	Z22.28-1946	<b>Projection Rooms and Lenses for Motion Picture Theaters, Dimensions for</b>	.15
.....	Z22.29-1946	<b>Theater Projection Screens, Dimensions for</b>	.15
.....	Z22.31-1946	<b>Motion Picture Safety Film, Definition for</b>	.15
.....	Z38.2.1-1946	The three standards on photography and cinematography listed above have been added to the series sponsored by the Society of Motion Picture Engineers. <b>Photographic Speed and Speed Number, Method for Determining.</b> A sensitometric method of determining and expressing the photographic speed of roll films, film packs, miniature camera films, sheet films, and plates is described in this American Standard. The quantity called "American Standard speed number" is a rating for film for use in connection with exposure tables, exposure computers, exposure meters, and similar devices for obtaining properly exposed negatives. This standard is a revision of the first edition which was approved in 1943.	.40

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# *An Important New Safety Standard!*

To Protect Pleasure-Seeking Crowds  
in Grandstands, Tents, and Other  
Places of Outdoor Assembly



Covers design, construction, location, maintenance, and use of grandstands, tents, and other structures and premises used as places of outdoor assembly. Includes requirements for capacity and loads, seating, aisles, railings or guards, ways of egress, and sanitary arrangements

**American Standard Requirements for Grandstands, Tents,  
and Other Places of Outdoor Assembly, Z20.2-1946**

**25¢**

Developed by a sectional committee sponsored by the National Fire Protection Association and the Building Officials Conference of America

*American Standards Association*

*70 East 45th Street*

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